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Electrical West

Journal of Electricity

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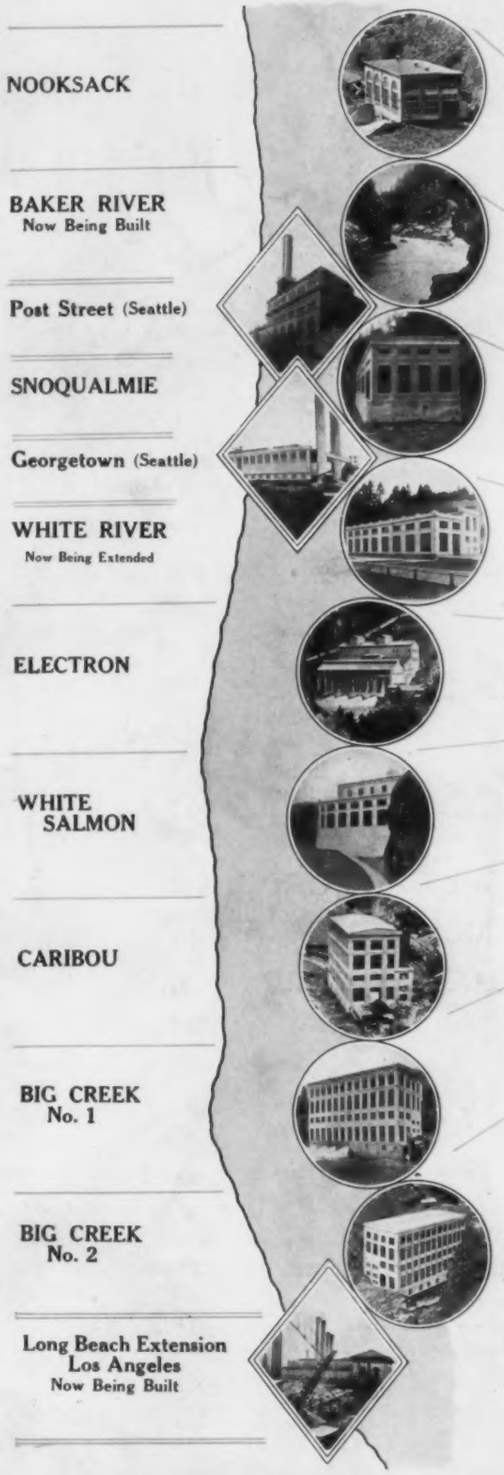

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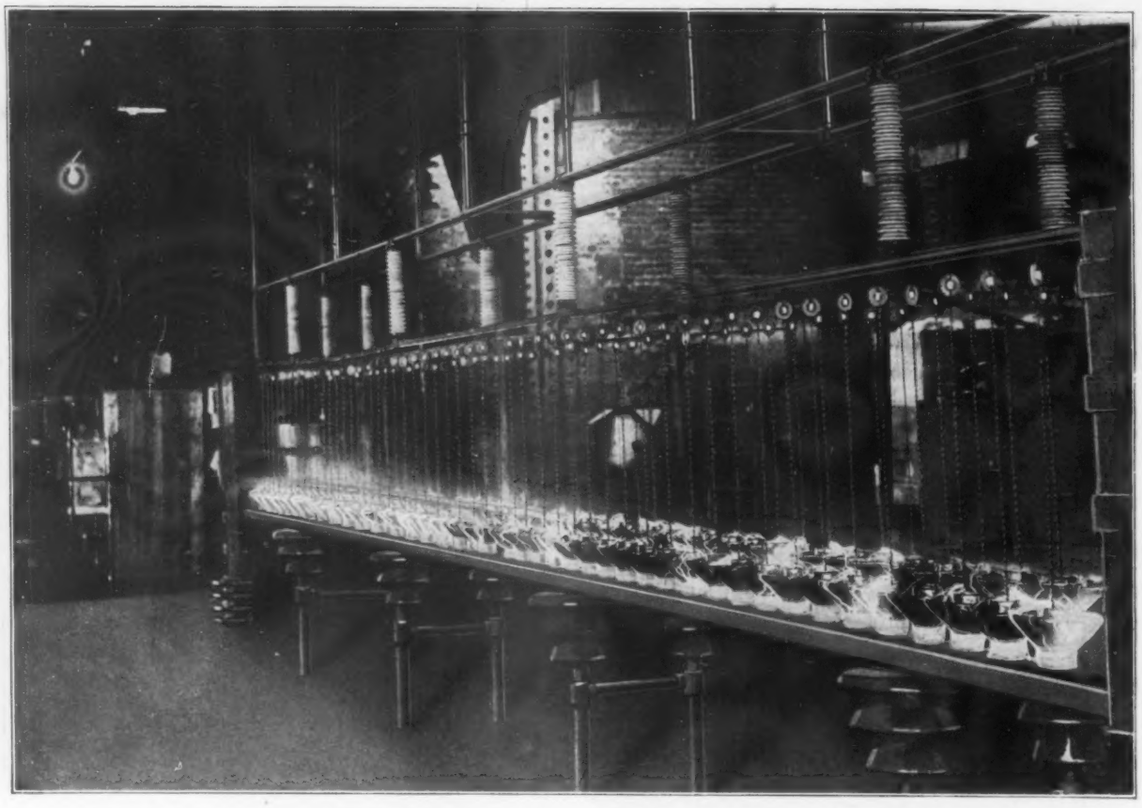

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C. T. HUTCHINSON, Acting Editor
G. C. TENNEY, Managing Editor

G. W. BARKER, Associate Editor
J. W. OTTERSON, Associate Editor

BERKELEY H. SNOW, Northwest Editor
CLOTILDE GRUNSKY, Contributing Editor

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Our Role in Your Conventions

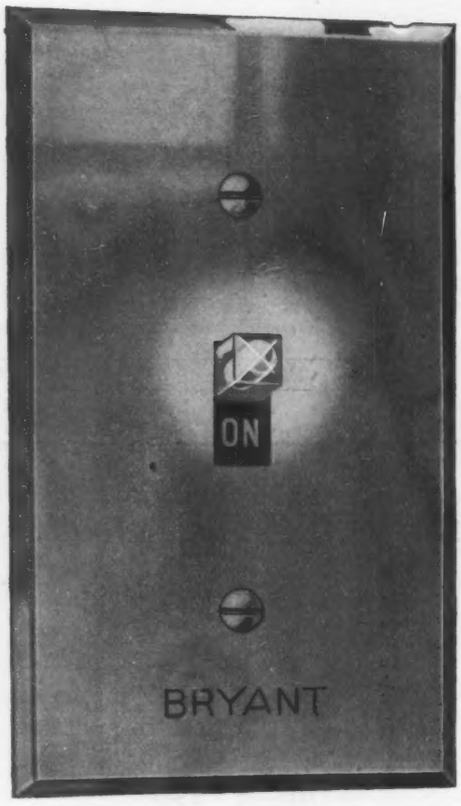
CONVENTIONS are an essential part of the life of an industry. By means of them ideas are interchanged, problems discussed and friendships made or renewed. Much good is derived from participation in their sessions.

Many ideas gleaned from the discussions are taken home and applied by the delegates. Many, too, are overlooked. And then there are the hundreds who are deeply interested in the convention happenings but who are not fortunate enough to be able to attend.

For both the convention delegate and the man who from necessity is forced to remain at home, the technical journal performs a great service. Its reporters attend all convention sessions, even participate in the discussions. They are trained to pick the wheat from the chaff, to distinguish between the important and irrelevant.

Their reports, published in the trade press, refresh the mind of him who attended the convention and paint a vivid word picture of occurrences for him who was not able to attend. These reports once published become a part of the literature of industry.

To the average reader, it may seem that undue space is given to chronicling the happenings at the eighth annual convention of the Pacific Coast Electrical Association just held at Coronado, Calif. The student of the industry, however, will derive much good therefrom, for he will find in the report a review of the progress of our great industry during the past year.



The Double Cure for Groping

The Bryant flush tumbler switch with Bakelite luminous handle is a double cure for groping;—groping in the dark for unseen switch buttons, and groping in the industry for something new to sell.

This Bryant switch has a handle of clear transparent Bakelite, which contains a glass rod painted with radium paint. It is a permanent part of the switch and cannot come loose and be lost. It can be seen in the dark from any angle and it shines forever.

This switch is the final step in the convenience of electric lighting.

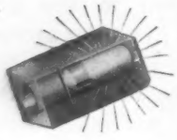
The market for it is unlimited. It has no competitors. Your jobber has it in stock or can get it promptly.

"Notice the Lighting Equipment"

This is a small glass rod, rounded at one end.

And this is a block of pure, transparant Bakelite, machined and polished like a pipe stem, slightly amber in color and clear as crystal.

The rod is covered with genuine "Undark" luminous paint, containing radium.



The painted glass rod is put inside the Bakelite block and the two are cemented to the operating lever of a Bryant tumbler switch. Simple. Perfect. Simply perfect.

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Common Sense in Public Relations

SOMEBODY said, once upon a time, that nothing was so uncommon as common sense. The keynote of the masterly address delivered by Richard E. Smith before the Public Relations Conference of the Pacific Coast Electrical Association at Coronado, Calif., was a plea for the application of that uncommon quality, common sense. Common sense, plain dealing, straight thinking, the frankest kind of publicity, the attitude of one who has nothing to conceal, is the prescription recommended to the public utilities as the first step in the solution of the public relations problem.

THE consumers, and really that means all the people, are unimpressed by acres of newspaper advertising, tons of circulars and the like, unless that very propaganda is brought to life by the fulfillment of all these glittering promises through the meter man, the bill collector, the man or the woman at the counter who constitute the active, physical contact between the company and those whom it serves. And, let us not forget the telephone operator, an asset if she can put a smile, rather than a frown, into the way she says, "Hello."

THE public relations question has been regarded by some people as a mass problem, a matter that can be handled at wholesale, like the production of canned meats or Ford automobiles. As Mr. Smith pointed out, it is nothing of the sort. It is an individual problem, and must be attacked on a unit basis, each unit constituting a complete problem in itself. What is a page of general, impersonal advertising compared to an irate consumer who stalks into the company's office with fire in her eye to enter a complaint of some failure in the service?

R. A. BALZARI would say, "Send her away with a smile." Right, and more, greet her with a smile. Keep your own temper, and she will recover hers. Then, let Mr. Counterman get busy on the complaint. Straighten it out, and then call her up, or write, and see if the cause of the trouble has been eradicated. An advertisement is really a promise, an obligation, too. It lies with the personnel of the utility to make that promise, that obligation, good.

PUBLIC relations is not a passing fancy, something that has suddenly sprung into life like a mushroom in the night. It is a direct consequence of the economic evolution of industrial organization, by which, for excellent reasons, great business enterprises have grown out of many little ones. "The public be told," is a good motto for a start. The responsibility that rests upon the personnel of the great public utilities, from the highest to the lowest, is the gospel that must be preached without cessation for generations to come.

Political Economy and Economy in Politics

IN signing the new tax-reduction bill, President Coolidge says, in part, "With some $12,000,000,000 of tax-exempt securities now outstanding and $1,000,000,000 of new issues each year, it is idle to propose high surtaxes. A man with a large inherited or accumulated capital is told he must pay one-half of his income to the government if he invests it in **productive** business, but he is invited to be relieved of all tax by the simple expedient of withdrawing from business and investing in tax-exempt securities. This does not mean that wealth in existence is taxed; it is not; it escapes. It does mean that **initiative and new enterprises are throttled.**"

It has been proposed to the voters of the State of California that they authorize the issuance of a half-billion in bonds for the purpose of acquiring an unregulated monopoly of the production of power. Through condemnation proceedings, the existing power companies would be taken over, and away goes the initiative, economy and all the other advantages of private ownership, and in their stead are substituted an army of political hangers-on, the construction of a great political machine in the hands of five super-powered commissioners, and the creation of a great lump of tax-exempt securities by which the rich will succeed in evading their proportion of the tax burden of the country at the expense of every wage-worker, salaried man, and modest business enterprise, who will have to make up the deficit, directly or indirectly, for the cost of government must be met.

Political economy is one thing. Transposed there is no economy in politics, if one may believe what history has taught us in the record of similar incursions of the government into the field of private business.

Education in the Printed Word

SOME odds and ends of thousands of years ago, just when is of no particular importance, man conceived the idea of trying to devise ways and means of recording his doings. The Chaldeans and Babylonians began the collection of manuscripts upon which the scribes, historians and priests had laboriously inscribed hieroglyphics setting forth the glories of their monarchs. Slabs of clay, baked hard, probably made up the first circulating library, except that it did not circulate to any marked extent. Nothing short of an elephant or two could possibly take away an editorial paragraph from the Babylonian newsstand.

It is interesting to note that the names that go down in history are those of the scholars, students, scientists and investigators, rather than the accumulators of great fortunes and that the records of the past, meager as they are, are more precious than gold or jewels. In fact, the desire to record and preserve the story of events is taken as the first sign of the development of mentality in man.

In these days of the prolific production of the printed word, and its lavish dissemination everywhere, it would seem difficult for the student to discriminate between that which is and that which is not worth while. In the mass of piffle displayed on the newsstands of today, the trade, class and technical journal finds no place. Education, knowledge and understanding would be more popular if they could be acquired without exertion, and it is precisely the qualities that make men read the periodicals pertaining to their calling that make them leaders in the industry they serve. If we were running the personnel department of some great corporation, we would be most interested in knowing what our employees read.

Why Not an Industrial Heating School for the West?

INDUSTRIAL heating schools have been held on two occasions in the East. Attended in large numbers by men from the central stations of the country, and by operators of industrial plants, and conducted under the auspices of the National Electric Light Association with the cooperation of two of the largest manufacturers of electrical equipment, these schools have been productive of excellent results. By applying the knowledge obtained at these schools the men in attendance have added load to central station lines that totals millions of kilowatt-hours and hundreds of thousands of dollars in revenue. Such a load has many desirable features apart from that of revenue. It would seem advantageous to the electrical industry of the West to sponsor such a school in this territory. There are numerous opportunities for practical observation of working equipment and there is available a large fund of information relative to installations that have been working for long periods. Manufacturers of heating equipment are glad to cooperate even to the extent of supplying trained men for presenting the various industrial applications of electricity and this information would be of interest not only to central station sales forces but to the actual operators of industrial plants. These operators would be quick to sense the advantages of improved product, reduced cost of production and minimized hazard to employees. The united action of all concerned in the promotion of such a school should produce benefits to all branches of the electrical industry.

A Committee of Judges Speaks on Municipal Ownership

ANNUALLY since 1917 the National Association of Railway and Utility Commissioners' committee on public ownership and operation has reported unfavorably upon such ownership and operation, holding that it is neither practicable nor justifiable. In its report just issued the committee reiterates its stand and points out the reaction against public ownership of utilities in several countries where it has in some degree prevailed. Portions of the report bear out the contentions of the electrical industry in

the West, where proponents of municipal ownership are forever harping upon the economies of their scheme. Of particular interest to the industry are the following quotations from the report of the committee:

"Municipal ownership of electric light and power is conceived to furnish service to the inhabitants of the municipality, and there can be no successful interconnection of municipal electric light and power plants which will serve the rural population and carry to the farmer and his family the conveniences of the city and of other industries. In view of the rapidly increasing municipal and state indebtedness due to purely governmental functions, it should at once be apparent that the public utilities should be owned and developed through private capital and regulated by the state, rather than an attempt by the government to enter into this business with the increased tax burden which necessarily follows and which is ordinarily accompanied by inefficient management and stagnation.

"In no other industry is there such a diverse ownership by the public. No less than two million stockholders own the electric light and power companies, of which more than six hundred thousand own the securities of the companies directly serving them. . . . Every bank depositor and every insurance policy-holder is an indirect owner.

"It is interesting to note that the Bureau of Labor Statistics of the United States Department of Labor in a recent report stated that in spite of constantly increasing costs of labor, construction and materials the average electric light and power rate in the United States is 5.1 per cent lower than in 1914. . . .

"In 1922 there were 1,992 municipal electric plants in the United States serving 2,031 communities having less than 7 per cent of the population of the country; of these 1,446 generate their energy, 47 both generate and purchase energy, and 499 purchase energy from private companies. There were 4,106 private companies serving 93 per cent of the population of the country. The private companies produced 96 per cent of the electricity and the municipal plants 4 per cent. According to the United States Census of 1917 the kilowatt-hour generation of the municipal plants decreased from 4.9 per cent of the total in 1907 to 4.1 per cent in 1917. **About 560 municipal electric plants have been either abandoned or sold to private companies.**

"As to comparative rates of electric plants the latest United States Census stated: 'The average rates received by municipal plants for their current are much higher than those charged by the other group, as is indicated by the fact that, while they sell only 4 per cent of all current, they receive 7.9 per cent of the income from the sale of current.' The census also is eloquent on the subject of the practice, or lack of practice, on the part of municipal officials in keeping records or figures of operation."

The opinions of the men who make up the regulatory bodies of the several states of the nation should carry much weight. Familiar as they are with the innermost workings of the privately owned utilities these men are in a superior position to judge the merits of private versus municipal ownership. They have no ax to grind. They are public servants charged with seeing that the public is served,—adequately and economically. The report of this committee should be given wide publicity. We urge that the utilities make an effort to see that its text is placed in the hands of all of their stockholders, and better still, all of their consumers.

Private Relations Is a Start Toward Good Public Relations

SOMEBODY started something when he, or she discovered that there was such a thing as public relations. Good will, as such as been capitalized among the assets of business enterprises for many years. However, good will, in the ordinary acceptance of the term, is held to embrace such things as patent rights, trade-marks and other things quite remote from the modern idea of the meaning of public relations.

Every business enterprise, however small or large, has a public relations problem. In its satisfactory solution lies the key to success. Again, public relations as an expression of the feeling aroused between the business and those to whom it caters, has a twin brother, private relations, a term that might be applied fittingly to the employees and officers of the business and their feeling toward one another.

The problem of private relations must be worked out first, or at least jointly with that of public relations if a satisfactory condition of the latter may be expected to be achieved. There are those employers who think that shower baths, rest rooms, and the platitudes usually found in the ubiquitous house organ are sufficient, but they are wrong. The American workman does not want to be patronized, nor does he want to be coddled. What he does most emphatically want is a decent pay check, first of all. The rest of it he can take care of himself.

Public relations, like charity, begins at home. Given a high average of happy contented employees, secure in the feeling that good work will receive something more tangible in the way of recognition than an occasional pat on the back, and the problem of public relations will solve itself.

Electric Lights and the Chinese Bandits

OCCASIONALLY members of a town council, who also happen to be motorists, will point to the comparative safety of traffic on unlighted country roads and will question the advisability of any street lighting whatsoever. The story of the introduction of electric lighting units in the interior towns of China as a protection against bandits will offer a good moral to these reactionary gentlemen. W. E. Fong, proprietor of the Union Electric Company, of San Francisco, is the man who is responsible for this introduction of electricity into a region where progress in lighting heretofore had not passed beyond the stage of the oil lamp. A friend of his from one of these interior villages wrote and asked his assistance in obtaining an acetylene outfit to be used as a night protection, much as the camper in the wilds relies on his bonfire to keep the wild animals at bay. Mr. Fong is a thorough believer in the method electrical and succeeded in selling an individual electric lighting plant to the town in question. So successful has its operation been and so completely have bandit raids been abandoned with that town as an objective that he has since sold four other plants to other villages. The record of reduced crime which parallels that of better lighting on the record books of our cities tells a similar tale, but for those who are not impressed with object lessons too close at home, the Chinese story may serve to carry home the point.

CURRENT COMMENT

Proponents of municipal ownership are zealous in pointing to cities which have had some measure of success with the ownership and operation of utilities.

Australia Has Bitter Taste of Public Ownership

Detroit, Los Angeles, the Ontario hydro project and others are lauded for the showings which they have made but no mention is made of cities, states and communities which have failed utterly in their ventures into the realm of business. F. G. R. Gordon in a recent issue of The Protectionist recounts the experience of New South Wales in its public ownership ventures. The facts and figures Mr. Gordon presents are of interest to the electrical industry of the West in view of the wave of municipal ownership propaganda which is sweeping over certain states in the Pacific Coast region. Mr. Gordon states:

In many respects the Australian states have the greatest democracy on earth. They were the first to adopt the socialistic schemes of political and economic democracy; they were the first to grant universal suffrage to all citizens, women and men; and they have made the greatest plunge into state socialism of any states anywhere.

As a result of this extensive scheme of public ownership, no one can say whether or no their public debts will ever be paid. It is pretty clear, however, that the debt of one of her most progressive states, New South Wales, can never be paid. Year by year this state has been piling up the public debt until at the present time her state debt is almost a billion dollars.

New South Wales has a population of 1,650,000, or about 41 per cent of the State of Massachusetts. Her population is much less than half that of Michigan. Imagine Massachusetts and Michigan with state debts of more than $2,000,000,000; then you have a clear idea of the vast burden of indebtedness that rests upon the people of that socialistic state of New South Wales.

The basis for this vast indebtedness is public ownership. New forms of taxation are enacted with every session of the Legislature with the hope that some way may be found to solve her financial difficulty. But the more taxes she raises the more she spends, and the state debt grows larger and larger. Her socialized industries generally show an annual deficit. She is forced to pay, in most instances, 5½ per cent interest upon her gigantic debt. Like all governments which engage in public ownership and operation, she has duplication costs all along the line.

The situation resembles that of our education systems. We have a city school board, a state board of education, and now the cry is for a national bureau to make another duplication—one more national bureaucracy, to boss the other two, with the pomp and parade of a cabinet department.

But in New South Wales and all over Australia, there is duplication in every department, for this socialistic state owns and operates the railroads, the telephone and telegraph, some mines, hotels, cafes, factories of many kinds, markets, ships, machine shops and so on.

In order that the reader may have a clear knowledge of how these public-owned enterprises are conducted, let us show the actual condition of her railway system. The state owns 5,116 miles of railways, and they cost $416,638,240, or $81,436 per mile for construction. This is an average cost of $25,000 per mile above the cost in the United States; yet railroad labor in New South Wales is 40 per cent below the average wage in this country, and always has been.

Freight rates on these state-owned lines average 2.76 cents per ton per mile (1924) as against a little over 1 cent in this nation. If the people of New South Wales had the same rates for freight transportation that we enjoy, her people would have saved in 1922 the sum of $22,000,000. High freight rates can not be charged to high wages in that country, for wages there average $422 per man per year less than they are in this country. If New South Wales paid her 37,000 railway employees the same wages that we pay ours, her wage cost for 1922 would have been $11,614,000 more than it was.

These socialized railways pay no taxes. If they paid the same (average) rate of taxation that our railroads pay, the state would have collected the sum of $6,364,072 in 1922. Her interest charge on the railway debt is $20,000,000 a year. Taking all these facts and boiling them down to dollars and cents, we find that these socialized railways actually lose $27,000,000 a year in spite of the $11,614,000 which she saves yearly by her lower wage rates, as compared with ours.

I do not know of a single advantage that this socialistic state enjoys through public ownership—not one. The service is poor, compared with service in this nation; the system is over-staffed, as are all government-owned enterprises. If we take wages, interest, taxes and freight rates into joint consideration, and compare all these with private ownership in our nation, we find that New South Wales loses about $39,000,000 annually because of public ownership and operation of her 5,000 miles of steam railways. And, I may add, New South Wales and all the other Australian states are plunging deeper and deeper into public indebtedness, largely due to public ownership.

Is it any wonder that she faces bankruptcy? Do we want to follow her example?

Representatives of the California Water and Power Act Committee who are touring California in behalf of the measure to be presented to the people in November are not meeting with a hearty reception from the press of the state. With the exception of the Hearst and McClatchy papers the proposed bill is receiving but meager support. The following editorial from the Fresno Republican is an example of the attitude which many of the editors in the rural districts have shown toward preliminary overtures of the Water and Power Act proponents:

Water Power Act Poorly Received by Rural Press

Rumors come to us that the so-called "California Water and Power Act" is to be brought by initiative before the people of California, at the coming November election, as a ballot proposition.

This is the proposal that was beaten by the people, when submitted in November, 1922, by a heavy majority.

The citizens of California should receive with an open mind any proposal that is made on initiative, for the extension of the care by the state of the water and power resources of the public in this state.

Even though it might be better and fairer for those who favor any such proposal to bring it before our lawmakers, in the legislature, still, it is a part of our political system to permit initiative measures, on the general election ballot, and

those who urge the state to enter upon a public ownership of water and power utilities have a right to a respectful hearing on such a measure.

But the "California Water and Power Act," by whatever name it may be called, if placed on this coming November ballot, is not a new proposition. It has already been well discussed. Its advantages and disadvantages, the mistakes of judgment that it contained, are already well known to the people of the state. If there is an attempt to foist this same measure, specifically, as it was carried on the ballot in 1922, on the people of this state, it should be even more overwhelmingly beaten.

The people who are behind that proposal should at least learn by their own mistakes. They should not employ the deception that was undertaken of the voters. And they should not try to build up a great political machine, under the guise of helping local irrigation districts, as was proposed in 1922.

If the proponents of this movement honestly submit a measure authorizing the use of state credit for the financing of local irrigation or local water or power or other utilities, where the locality has itself initiated the proposal, and has assumed a fair proportion of the responsibility, and has assured itself of the need for and the industrial support for the bonds to be issued—then the proposal would be free from a large part of the objection that defeated the "California Water and Power Act" in 1922.

Cost of Propaganda

Those who favor and those who oppose the resubmission of the "California Water and Power Act" of 1922 should meet fairly the discussion that was made, in 1923, of the use of money by the opponents of that ballot measure.

Large amounts of money were, in fact, spent by both supporters and opponents of the ballot measure in 1922.

And both supporters and opponents included "interested" persons.

We have to expect that sort of thing. Financial strength was brought to the support of the measure by persons who were interested and who were malicious in their attitude toward the power companies. And power companies who felt that their investments were being menaced spent large sums of money in fighting the measure.

The mistake the power companies made was in trying to conceal the fact that they were interested in fighting the "act."

They had a right to fight it. The measure did threaten their property rights.

Why should we, as voters, be so foolish as to assume that we are to be cheated into taking sides on a question merely because a man or a measure or an institution has money enough to have a chance to "talk" to us?

The money that was spent by the power companies in hiring speakers and printing reading matter was well spent if it was honestly spent. It was our observation that much of the arguments on both sides were "bunk." But it was also our observation that much of the argument of the supporters of the measure was positively deceptive about the terms of the "act." That charge was made in the campaign and never met by any of the speakers or writers for it.

As long as we in California decide, in whatever way we do, to continue the handling of our utilities by "private" corporations, just so long should we permit them to protect their property, by proper appeal to the voters, against deceptive or confiscatory legislation.

It is a proper use of the funds of a power company to spend it, in reasonable amounts, for the expression of the interests of the power business. Just as it is to the interests of voters to know how the public money is being spent and how public officials are conducting themselves, so it is to the interest of citizens to know how the utility companies are handling their business and what is the relation of this business to our state politics and other lines of public activity.

The mistake the power companies made, in 1922, was in trying to conceal what was a perfectly obvious public function of their publicity departments.

Terrific Political Club

The people of California, however, should take the rights of the power companies into consideration in this matter only as a minor issue.

The "California Water and Power Act" proposed to bond this state for five hundred millions of dollars.

Or call it half a billion dollars.

Or call it $500,000,000. It is big enough any way.

And that is not the whole extent of this bigness. This half billion dollars is a revolving fund.

This half billion dollars is in the hands of the members of a state board with virtually unlimited power to place large or small amounts of it in various parts of the state wherever they may see fit.

The question of investment is one entirely within their own judgment. No one can say them nay.

They can deal with an already created, well established irrigation district, or they can promote a district of their own creation. Or they can establish a "project" of their own and promote it entirely with state money.

They can go into entirely untested territory, for political reasons, and give money for the development of very questionable power opportunities under local or other political pressure. They can develop power projects, just as roads are laid out at times, on the pull of favored individuals or groups, or on popular clamor, whether there is prospect that the projects will ever pay out or not.

This is stating the thing at its extreme, it is true. Presumably, no state board would ever go this far.

But the language of the act does permit such a board, if the "act" should pass, to take steps that popular clamor would almost hang the members for.

This is the act which it is proposed to foist on the people of California again by initiative.

The disapproval of the people of initiating this measure should be expressed in positive terms.

Northwest Sees Significance of Nela Convention

Papers in the Pacific Northwest are not overlooking the significance of the election of Franklin T. Griffith, president of the Portland Electric Power Company, to the presidency of the National Electric Light Association. The importance of a national convention of the character of the national electric gathering, to that section of the country is emphasized in the following editorial from the Portland (Ore.) Oregonian:

No effort should be spared by Oregon to bring the convention of the National Electric Light Association to Portland in 1925. Precedent favors selection of this city, for the custom of the association is to meet at the home city of its president, and it has elected Franklin T. Griffith to that office. But the city should offer an invitation, should strive for its acceptance and should provide generously for the comfort and entertainment of the thousands of leaders in the electric field that will attend.

A great opportunity will be offered by the convention to the entire Columbia River basin. In this field we have some of the best, most modern hydroelectric plants in the country, others are under construction and we have sites for others of vastly greater magnitude. We also have natural resources in abundance. The masters of the electrical world should be shown what has been done to utilize the immense water power of the Columbia River basin and what far greater possibilities remain. Their minds should be fixed on this region as their largest future field of operation.

On water power above all else this region must rely for its highest development. Coal is comparatively scarce and not of high quality, its cost is high, the supply liable to interruption by industrial troubles and its use is uneconomical. Fuel oil must be brought from California or the Rocky Mountain district, and the supply may fall short within a generation. Water power as a generator of electricity is inexhaustible, is open to none of the objections raised against coal and oil, is cheaper and its cost is less the more of it is used from any one source. It is the means of cheapening transportation by rail or inland waterway and thus can remove the handicap of distance from the world's largest markets.

By displaying its opportunities the Columbia River basin can attract the technical ability of electrical engineers and can prepare the minds of capitalists to develop its power and to employ it in manufacture. An impetus can thus be given to general development.

BAKER LAKE and Mount Baker, at the source of Baker River, in Whatcom County, Wash. The Puget Sound Power & Light Company is soon to start construction on a 235-ft. dam on the Baker River, near the town of Concrete, to impound water for the driving of a 45,000-hp. hydroelectric plant. The development of the site has been delayed on account of protest of the United States Bureau of Fisheries. Recent arrangements have made the erection of the dam agreeable to the bureau.

Public Relations Forms Theme of Coronado Convention

WITH an attendance in excess of 450, the eighth annual convention of the Pacific Coast Electrical Association, held at Hotel del Coronado, Coronado Beach, Calif., June 16-20, 1924, will go down in history as one of the most successful gatherings of electrical men ever held in the West. The unexpectedly large attendance was gratifying to both officers and members of the association in view of the power shortage and the general slack business conditions brought about by lack of rain.

A unanimous and cordial invitation was extended to the National Electric Light Association to hold its 1925 convention in San Francisco.

The convention was marked by several innovations, chief among which was the Public Relations meeting Thursday, June 19, and a meeting for the women held on Wednesday, June 18. Keen interest was displayed in both of these meetings and their success indicates that they will be important features of future conventions. A third important session was the Public Service Conference which replaced the well known Development Conference, a feature of former conventions. At this meeting leaders in the various public service fields of California outlined the problems of the utilities of the state, demonstrating that all utilities have common problems and that for the good of the public they should cooperate to the fullest extent.

FRANK A. LEACH, JR.

Vice-president and general manager of the Pacific Gas and Electric Company, who has been named president of the Pacific Coast Electrical Association to hold office during the coming year.

Meetings of the various sections of the association showed that the past year has been an active one with many definite achievements. In the Technical Section, the work of the hydraulic power bureau in the study of control and outlet works for dams and diversion works comprised a large part of the report of the national committee. In the Commercial Section, the work in relation to appliance sales methods and the activities of the electric transportation bureau were outstanding features of the year. Other sections and committees reported similar progress.

For the first time in the history of the association the election of officers was held at the opening business meeting. This was done in order to allow the officers for the new year to hold an organization meeting before the convention adjourned. Frank A. Leach, Jr., vice-president and general manager of the Pacific Gas and Electric Company, San Francisco, was elected president of the association for the year 1924-25. The two vice-presidents are William Baurhyte, president of the Los Angeles Gas & Electric Corporation, and S. Waldo Coleman, president of the Coast Counties Gas & Electric Company, Santa Cruz. J. F. Pollard, vice-president and general manager of the Coast Valleys Gas & Electric Company, Salinas, was elected treasurer and Samuel H. Taylor was re-elected secretary. The members of the executive committee are James B. Black, vice-president and general manager of the Great Western Power Company, San Francisco; Harry Harper, manager, Western Electric Company, Los Angeles; Charles T. Hutchinson, vice-president and general manager, McGraw-Hill Company of California, San Francisco; R. M. Alvord, General Electric Company, San Francisco; A. M. Frost, manager, commercial department, San Joaquin Light & Power Corporation, Fresno; K. E. Van Kuran, manager, Westinghouse Electric & Manufacturing Company, Los Angeles; F. O. Dolson, vice-president and general superintendent, Southern Sierras Power Company, Riverside; P. M. Downing, vice-president in charge of engineering and operation, Pacific Gas and Electric Company, San Francisco; Clyde Chamblin,

president, California Electrical Construction Company, San Francisco; and R. J. Holterman, Fobes Supply Company, San Francisco.

K. E. Van Kuran, general convention chairman, and his committees left no stone unturned to make the convention as successful as possible. Ample entertainment was provided, especially for the ladies. The golf tournament drew an exceptional number of entries and the competition for the various cups and prizes offered was close.

One of the entertainment features was a complimentary luncheon given by the Electric Club of San Diego on Tuesday, June 17, to all members and guests in attendance at the convention. In addition to an address by G. H. P. Dellman, president of the club, there were many unusual features of entertainment including a serio-comic presentation of radio, by H. N. Sessions, and character impersonations of a well-known humorist, by R. E. Smith.

First Business Meeting

Characterizing the year just closed as one of the most important and profitable in the history of the association, President L. M. Klauber summed up the achievements of the various committees in his annual address delivered at the opening business session of the convention held Tuesday, June 17. President Klauber said:

This year our divisional committees, continuing their record of really practical achievement, have functioned with energy and efficiency, and it is certain that the reports which they are presenting at this convention will be most stimulating and useful to our membership. Not only have the several section chairmen organized most constructive programs for their main committees, but sub-committees to the second and third generation have been active, with the result that a very considerable proportion of our membership has been engaged in this essential work.

The reports which are being presented at this convention, important as they are, are not by any means the sole achievement of the committees which are presenting them; for at the several committee meetings which have been held throughout the year, the frank and practical discussions which have taken place have been of great value to the members participating. Our individual members, and through them their companies, can secure no greater benefit from association work than may be derived from the intimate contact at committee meetings with their fellows from other companies engaged in similar lines of activity.

The problem for the future, if this work is not to lose interest for those engaged therein, is to bring into the committees a constantly shifting group of individuals with a fresh viewpoint and enthusiasm. While sufficient old members should be retained in each committee to secure continuity of effort, our younger members should always be afforded the opportunity and encouraged to become active. Likewise, new subjects for investigation must constantly be sought in order that meetings and reports will not degenerate into a constant reiteration of worked out material. And this committee work must at all times have the support of our company executives in order that meetings will be properly attended.

He drew attention to the opportunities for closer cooperation between the association and its sister organizations, the Northwest Electric Light and Power Association and the Pacific Coast Gas Association, and recommended that in the future arrangements be made whereby all three would be officially represented at the conventions of the others.

The California Water and Power Act was stressed by President Klauber when he said:

Upon the political horizon we discern once more the so-called Water and Power Act. That this proposition should be put forward in California, the state looked upon by all the world as the most progressive in matters electrical, which advancement has been achieved by private initiative and resource, is astonishing. And that it should be put forth within two years after its overwhelming defeat in 1922, without change in statement or purpose, is beyond explanation.

The prononents of this Act would cause one to believe that the electrical industry in California has failed of its duty and that only state ownership and political control can rescue our state from the low point to which it has fallen. No better defense of our industry, nor refutation of the untenable arguments used by the backers of this measure, was ever made than the masterly address of President A. B. West at our annual convention in Los Angeles two years ago. His figures require no change; his arguments cannot be contradicted. Let the industry rest assured that the people will once more defeat this pernicious proposal, and this so decisively that it will never again be placed on the ballot in our state.

Commenting upon other achievements of the electric utilities, including interconnection and employee training, President Klauber stated:

Our California systems, long welded into a single unit or power pool, are being joined from time to time by additional bonds of interconnection. The wisdom of such interconnection has never been better demonstrated than during the past season of unprecedented lack of rainfall; and interconnections originally initiated as a basis of improved efficiency, have become an economic necessity.

Our member companies continue to give the greatest thought to the matter of employee training and education, not only for the betterment of the employee himself, and his usefulness to the company, but for the improvement of this point of contact between the company and the public. As has been well said by the chairman of the National Educational Committee of our association, "A man is judged by the company he keeps and it is equally true that a company is judged by the men it keeps." For every customer who comes in contact with a company official, fifty will come in contact with a company employee, and unless the latter be imbued with that spirit of courtesy, fairness and sincerity which has become the guiding principle of our industry, the company will fail to secure public good will regardless of how strong the desires of the officials may be to secure that end. This has been the thought which has culminated in the Smiles Club activity, initiated by our association.

Report of Public Policy Committee

Chief in importance among the committee reports submitted at this meeting was that of the Public Policy Committee, presented by W. L. Frost in the absence of R. H. Ballard of the Southern California Edison Company, the committee chairman. Extracts from this report follow:

Satisfactory public relations depends mainly upon two things. First: That one who wishes the friendship of the public must get it through performing real service to the public. Second: That the public must realize that such service is being rendered at the very minimum of cost.

Broadly speaking, about the only thing that distinguishes civilized from savage society is cooperative organization. Under cooperative organization, individuals and groups perform services for other individuals and groups in return for services of other kinds rendered by those other groups. That is about all there is to modern business. If every exchange of service for service is on a fair basis, everybody will be prosperous, and wealth of individual, group, and nation, will constantly increase. If the exchange between groups is on an unfair basis there may be a temporary gain on one side, and loss on the other side, but the ultimate effect is loss on both sides.

Our own electric light and power business is rendering its service upon the smallest possible basis of return—i.e., for the bare wages of the capital invested in service. We have no voice in fixing the current rate of wages of capital; those wages are fixed in the open market. Capital always has the option of engaging in our business, under this strictly regulated limitation, or of entering some one of the hundreds of unregulated industries where there is no limit. The advantages we can offer come from the safety and stability accompanying careful and efficient management of this necessary business.

Increase in the amount of service we can render for a dollar has already been achieved to a considerable degree

through power exchanges. We believe that on the Pacific Coast we are a little in advance of all others in this matter. Our lines are not only connected from Oregon to Mexico, but substantial quantities of power are being transferred from one section and from one company to another as economic needs require. The value of these power exchanges has never been more strikingly illustrated than during the present dry year. We are using steam power, wherever located, to the utmost. We are conserving stored water, wherever located, to the utmost.

We are, however, only at the beginning of the power exchange problem. While this problem may not become nation-wide for many years, the solution must in the near future involve all the Western states, and the utilization, wherever needed, of plants in widely separated water producing areas, with consequent diversities in seasonal water available.

Power exchanges are almost equally important by reason of load diversities. The problem of the future is far beyond solution by any single state; and of course, no municipality or group of municipalities can hope to solve it. The public has been somewhat confused in this matter by the use of the term "superpower." Apparently the public believes that "superpower" means some new invention for the production of power with marvelous cheapness; the transmission and distribution of it without cost, and the control by some vast organization, either private or political. The term is not a good one. The public must be brought to understand that "superpower" merely means "exchange power." At the same time the public should be given an opportunity to understand diversity and to learn of the strides that are being made in the direction of fitting together diverse sources and diverse uses of power—not indeed through the creation of a single great system—but rather, through the cooperation of separate local systems, locally controlled and under state regulation.

Customer Ownership

The Pacific Coast is far in advance of other sections of the United States in the matter of customer ownership of the electric business. This policy, inaugurated by the Pacific Gas and Electric Company, participated in by practically every important power company on the Coast, and in which the Southern California Edison Company with its 75,000 stockholders leads all the power companies of the world, is sound. It is real cooperation. The extension of the policy is as great a public service as any of us can render to state or nation. Our industry on the Pacific Coast is already in a large measure a mutual enterprise. It should become as completely a mutual enterprise as the business of any life insurance company.

The Farmer

Of all large groups in America, farmers seem to be in the most difficult situation at the present time. Many of the farmers' difficulties can be lessened by intelligent concerted action. The electric utility can and should help along these lines; particularly is this the case on the Pacific Coast, where farmers are already large users of electric service. To make them still larger users, we need only help to make them more prosperous. Electric utilities can cooperate with farm organizations, can help such organizations to get the facts respecting current conditions. This sort of cooperation may perhaps best be reached through close relations with the various farm bureaus and cooperative associations and by joint meetings at which cooperative mutual effort of farmers and the utilities serving them may be furthered. Much is being done along these lines and much more should be done in the future.

Political Ownership

No greater service can be rendered to state or nation than to oppose political ownership of business in whatever guise it may appear. We are inclined to regard these attacks as peculiar to our industry. They are not. Less than one-third of the proceedings of the Toronto Convention of the Public Ownership League of America, in September, 1923, was devoted to attacks on our industry; the other two-thirds were devoted to banks, insurance companies, railroads, telephone companies, single tax, money system, advocacy of a political school machine, etc., etc. The real aim of the leaders of this movement is communism. Most of the followers do not know this, and of course, the leaders deny it.

No careful student can fail to conclude that political ownership has always failed to give either the quality of service, or the low cost, of well managed corporations. Many political ownership schemes have well-nigh bankrupted the unfortunate communities that have attempted such entering wedges of communism.

Municipal political ownership agitation is always with us, but seems to be losing ground. In the whole United States out of upwards of 2,300 municipal electric enterprises that have been attempted at one time or another, about one-third have gone out of existence, or have become customers of utility companies. Of those municipal enterprises that remain, only a handful are regarded as successful—even by enthusiasts—and this handful must depend mainly either upon concealed drafts on the taxpayers, or upon constantly greater and greater construction expansions to conceal their real situations.

Tax-exempt securities furnish one of several means through which municipal enterprises shift their costs upon taxpayers without the taxpayers' knowledge. Tax-exempt securities have been condemned by Republican and Democratic secretaries of the treasury, and by the President of the United States. The evil is multiplying. Tax-exempt securities accomplish three things. They afford a refuge whereby rich men need not pay income taxes. They hamper industry and promote stagnation and decay. They encourage political extravagances and conceal from the public the real cost of those extravagances—for which the public must pay.

Progress in Public Relations

We cannot emphasize too much the importance of all of our members making real friends of all of their customers and of the general public. Good will is one of the most definite assets which any business may acquire; it may be defined as the measure of spiritual factor in business operation. The physical assets of a utility corporation may be of fabulous value and make a handsome showing in an annual report to shareholders, but the value of that intangible asset, the confidence and good will of the man in the street, may be, after all, the one great element which produces earning power and gives stability to the property.

Public relations is the sum of individual relations, not the result of an aggregation on the one hand dealing with a group on the other, but a man to man affair. The points of personal contact in an electric utility company's organization are numerous and important. Each individual man in any organization either adds strength to it, or weakens the structure, depending upon his attitude toward others. All employees should be alike in seeing that the consumer receives the considerate, careful, attentive, courteous treatment to which he is entitled. Under modern public policy a utility company concedes to its consumers and to the public every request that is reasonable, with the result that the public in the main, abstains from making unreasonable requests. Our relations with the public are now on a better footing than ever before. We shall not stop short of complete mutual understanding.

Report of Other Committees

In reporting for the Technical Section, H. L. Doolittle of the Southern California Edison Company, as chairman of the section, recommended that in the future but two section meetings be held each year, making, with the annual convention, three technical gatherings. He suggested that future committees choose fewer subjects for study during the year and emphasized the importance of larger attendance at the committee meetings, if members are to receive full benefit from the work.

Among the outstanding accomplishments of the Commercial Section during the year just closed, according to A. E. Holloway, San Diego Consolidated Gas & Electric Company, chairman of the section, were the electric vehicle school held in San Francisco last fall and the plans which have been perfected for the holding of lighting schools during the fall of 1924. He commented upon the success of the bureau plan of organization which was adopted for the first time by the section last year.

A. B. Carpenter of the San Joaquin Light & Power Corporation, chairman of the Accounting Committee, called attention to the importance of early consideration by the member companies of the

association, to the allocation of earnings and expenses to projects operating under federal license. He also recommended that the new committee consider commercial department expense during the coming year.

The necessity for salvaging obsolete equipment was brought out by C. A. Kelley, Southern Sierras Power Company, chairman of the Purchasing and Stores Committee, in his report. He stated that his committee had considered the necessity for a supply department budget and would discuss that subject during its sessions. He recommended that the subcommittee on automotive and labor-saving devices, which did excellent work during the year just closed, be organized into a separate committee or section.

Reports on the activities of the Insurance Committee and the Personnel Committee, both of which are new, were presented by R. J. Cantrell, Pacific Gas and Electric Company, and S. C. Haver, Southern California Edison Company, the respective chairmen. Al C. Joy, San Joaquin Light & Power Corporation, reported for the Publicity Committee.

Commercial Section Meetings

A. E. Holloway, superintendent of the commercial department of the San Diego Consolidated Gas & Electric Company and chairman of the Commercial Section, presided over the meetings of that section. Reports of the various bureaus and subcommittees were delivered under the direction of the individual sub-chairmen who conducted that part of the meetings with which their committees were most intimately concerned. The papers and reports having been read before the meeting, the entire time was available for discussion. This arrangement resulted in an exchange of views and in statements of conditions in various territories.

Lighting Bureaus' Meetings

In connection with the reports of the various lighting committees there was brought out the necessity for more and better illumination. Ensuing discussion showed that the increased load possibilities offered by the study of consumers' illumination problems and the installation of adequate lighting, together with the greater satisfaction that comes from a better installation, make it well worth while for utilities to devote attention to this branch of their service.

A discussion of the various types of signs and of the necessary operating procedure in connection with the use of electric signs, such as keeping the lamps clean, providing a ladder, steps or runway on large signs in order to facilitate relamping, was productive of many original ideas. The sale of signs adapted to the premises was also discussed at some length.

It was brought out, in the discussion of commercial lighting, that many merchants had increased their business appreciably by the installation of modern lighting. The opinion was expressed that the superior appearance of a well lighted store and the greater ease with which goods can be observed and examined by prospective purchasers soon pay for the cost of making the change in illumination layout.

Improved residence lighting was advocated for making the home a place of greater cheer and comfort. It was thought that insufficient attention had been paid to the lighting of homes and that in many cases fixtures had been installed that were totally inadequate or were not in harmony with the surroundings. This is considered to be due in part to the fact that many manufacturers are putting out so-called "package" fixtures that are often made to be sold at a low price without regard to quality or adaptability. These fixtures are often installed by individuals without regular places of business; being sold from a catalog and at a price inconsistent with quality or good merchandising. This matter has reached such proportions that it is receiving the attention of the National Association of Fixture Dealers and it was stated that a strong effort is doubtless to be made to influence manufacturers to either discontinue this type of fixture or to market only such goods as will be suitable for general domestic installations.

Considerable discussion of the "Davidson Plan" was held and it was the practically unanimous opinion that the lighting bureau should lend its hearty support to the idea. A plan for holding illumination schools at three different points in California was discussed and the proposed course of study was outlined in detail.

Appliance Bureau Meetings

The Appliance Sales Committee, under the direction of H. C. Goldrick, Western Electric Company, felt that steps should be taken to better inform sales employees of the characteristics of electric appliances in order that more satisfactory sales might be made and that the devices might be more intelligently sold.

The paper on commercial and domestic heating, by G. L. Stannard, Scheeline Manufacturing Company, was passed on motion of A. J. Kercher, consulting engineer, who also moved that the definition of indirect heaters be changed as follows:

> Radiator is a term which is connected with appliances for steam and hot water heating and should be applied to heaters of similar appearance.

This committee passed two resolutions, one to the Executive Committee on the matter of the routine to be followed in the preparation and presentation of convention papers, and the other on the matter of wiring requirements for electric range and water and air heater installations. The feeling was that the present regulations are generally too severe, requiring much greater conductor capacity in the main and sub-feeds than the operating characteristics of the load demanded. This results in excessively high installation costs and often tends to retard the sale of electric ranges, water and air heaters. There was active discussion of the paper on electric ranges and water heating, the matter of automatic water heaters receiving special attention.

The discussions of the Commercial Section meetings indicated a need for better merchandising policies for central stations and closer cooperation and co-ordination between all of the various merchandising agencies in order that central stations might reap

the benefit of the maximum possible appliance saturation. It was also made very clear that there is a necessity for some system of properly training retail sales forces and the further consideration of this feature was recommended to the incoming appliance bureau.

Technical Section Meetings

The various sub-committees of the Technical Section spent a very active and profitable year as indicated by reports presented at the convention. The work of the Hydraulic Power Committee in compiling data and information regarding control and outlet works for dams and diversion structures was particularly noteworthy. The report of this committee comprises the major portion of the report of the national committee. Discussion of this report brought out the necessity for the study of settling basins and sand boxes and it was recommended that next year's committee undertake this work. It was also pointed out that all water hammer theories are not applicable to many of the penstocks used in Western hydro practice. These theories assume that penstocks are the same uniform diameter throughout, whereas in the West, it is not uncommon to find penstocks with varying diameters.

In the discussion following the presentation of a paper on "Electrically Controlled Valves" as applied to penstocks by George Bragg, Pacific Gas and Electric Company, J. E. Woodbridge of San Francisco stated that he did not think it advisable to incorporate too many automatic features in connection with the operation of valves because of the complications introduced. H. L. Doolittle, Southern California Edison Company, chairman of the section, stated that in his opinion automatic operation of valves at the head of penstocks should be applied to closing only, so as to avoid the possibility of accident.

Apparatus Bureau Meeting

Three major subjects received the attention of the Apparatus Bureau under Chairman E. R. Stauffacher, Southern California Edison Company, during the past year. Studies of transformer cooling systems, reclosing switches and transformer polarity were made. A valuable paper on the subject of transformer cooling was presented by R. M. Peabody, Southern California Edison Company. In this paper Mr. Peabody described experiments made on the system of his company, using automobile radiators for oil circulation to increase the rating of self-cooled transformers by employing forced draft over a greater radiation surface. Results of this test installation indicate a field of application which should receive further study by operating companies and manufacturers.

In a paper on "Reclosing Switches and Their Operation" J. H. Cunningham, General Electric Company, Los Angeles, described the three general systems now in use. One method closes the switch three times in rapid succession with no time interval. Another scheme employs either alternating or direct current and recloses the switch three times at predetermined intervals. A third method is a periodic selective system for the gang operation of circuit breakers which permits the closing of one switch at a time to prevent drain on the closing circuit and overload on the station. Direct current only may be used in this system. John Koontz, Great Western Power Company, pointed out the necessity for employing circuit breakers of higher rating to avoid trouble when applied to automatic reclosing systems because of the heavier operating duty cycle.

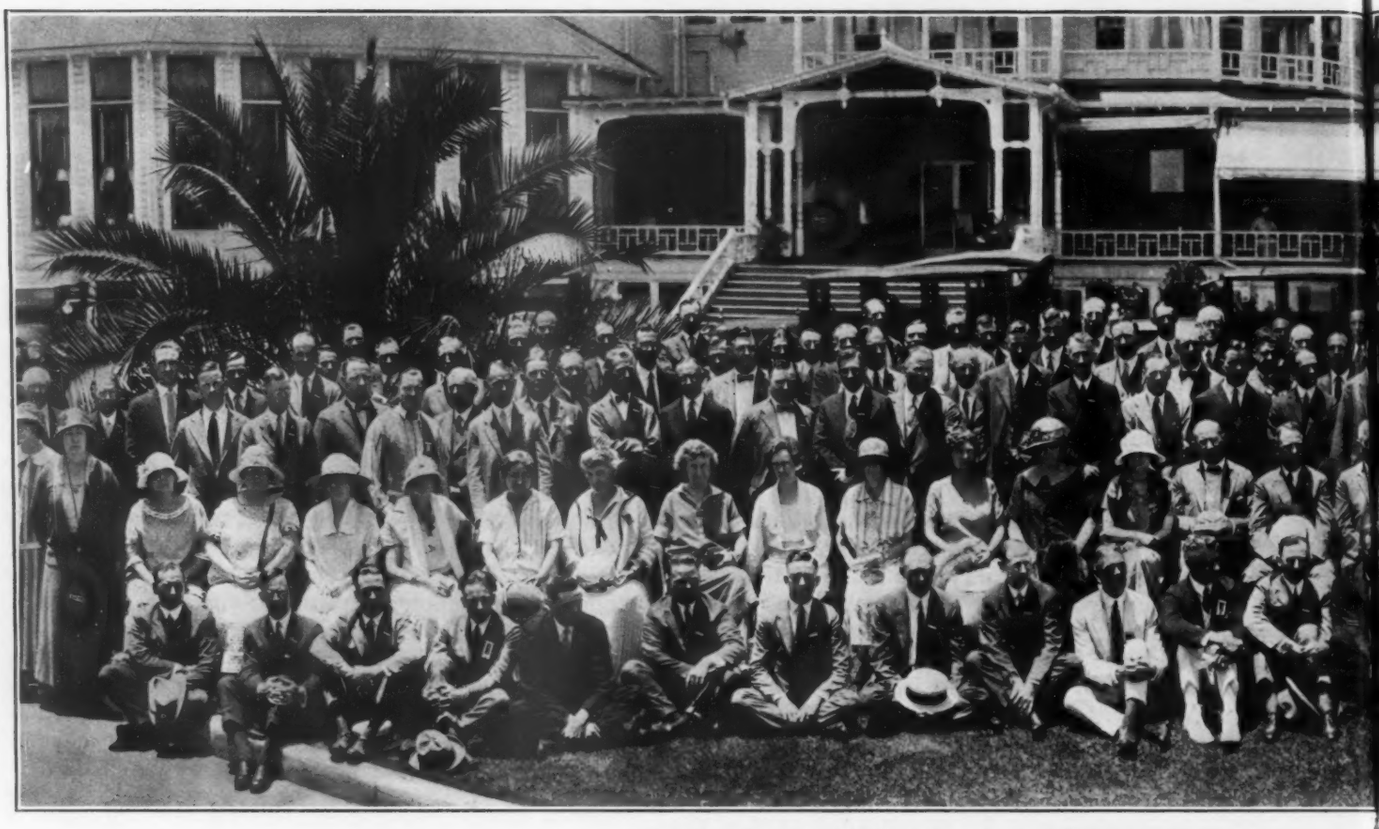
Although the question of transformer polarity received much consideration during the past year, operating companies are not in entire agreement on this subject and it was recommended that the question be definitely settled by the Apparatus Bureau during the coming year. Chairman Stauffacher recommended that a detailed study of grounding systems be made by the new committee.

"Supervisory Control of System Operation" was the subject of a paper by A. W. Copley and P. B. Garrett, Westinghouse Electric & Manufacturing Company. The authors described what may now be done in the remote operation of substations through the system of supervisory control from a central load dispatching office. Part of the paper consisted of a practical demonstration of some of the supervisory control equipment, consisting of a five-section substation panel with the corresponding control board for the dispatching office.

Overhead Systems Bureau Meeting

One of the important subjects investigated by the Overhead Systems Bureau was the use of steel poles as a substitute for cedar poles. Tests conducted by the committee in the yards of the Pacific Coast Steel Company provided much valuable data for further study of this problem. It is felt that the principal use for steel poles will be in transmission and trunk feeder lines rather than in distribution service. With the present cost of wood poles steel seems uneconomical for short spans, and furthermore the important problem of being able to work circuits hot on steel poles has not been solved. Estimating the cost of the steel pole at about twice that of the wood pole span lengths double those now employed for wood pole construction would be necessary. Span lengths of over 400 ft. must be used if real economy is to result. One of the serious problems facing the utilities, in the southern part of California in particular, is the fortifying of wood poles against the attacks of termites, a wood-boring insect. In an effort to solve this problem, the Southern California Edison Company will erect 1,000 Douglas fir poles, the entire pole being treated by the empty cell, pressure creosoting process.

A paper by J. P. Jollyman, Pacific Gas and Electric Company, on "220-kv. Line Operation" showed that only a few minor cases of trouble have been reported during the eight months the Pit River line of his company has been in operation. Some of these were entirely mechanical. All 220-kv. equipment has functioned satisfactorily, Mr. Jollyman stated. Relay operation has been highly satisfactory. In the opinion of Mr. Jollyman all of the problems in connection with 220-kv. transmission have not been solved, and



Convention delegates and visitors in attendance at the annual convention

difficulties may be expected. He anticipates no trouble in the solution of such problems as might arise. Before the Pit River line was placed in operation exhaustive corona tests were made, which have thrown considerable light on the corona question and indicate results at variance with the present established laws and theory. A complete report on these tests is to be presented at the Pasadena convention of the American Institute of Electrical Engineers in October. In discussing this paper, H. A. Barre, Southern California Edison Company, said that no trouble of a serious nature has been experienced with the 270-mile Big Creek lines which have been operating at 220 kv. for more than a year. In designing a third Big Creek line to operate at this voltage he stated that the company plans to use a larger conductor with less tension than the recently completed 30-mile Laguna Bell extension. Experience has indicated that some changes in line hardware and the method of dead-ending are advisable.

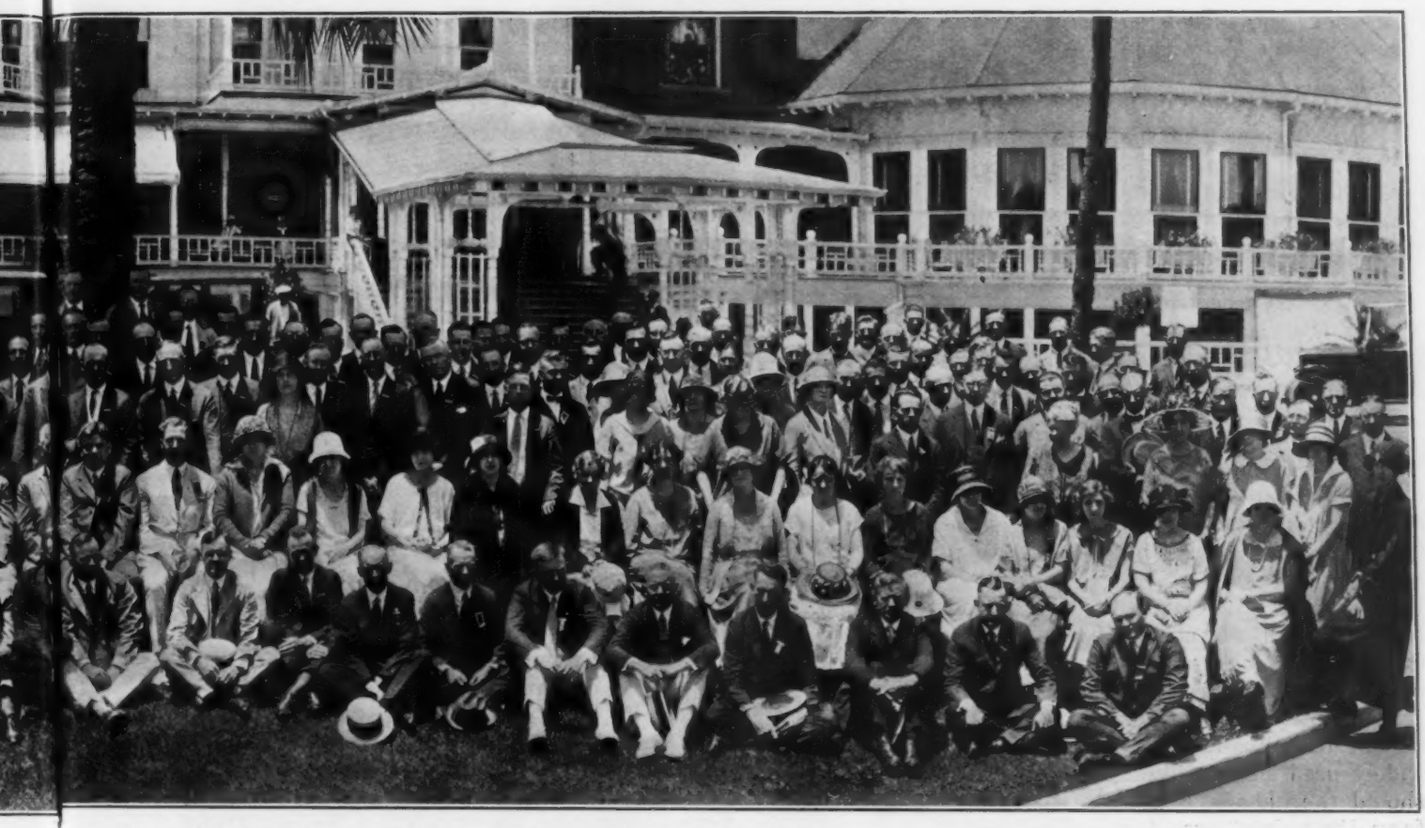
An interesting paper was presented by E. H. Peabody, New York, in which he described a new type of mechanical oil burner which permits about the same flexibility as with the old steam burner. The author questioned the advisability of using such large furnace volumes as is now considered good practice.

Publicity Section Meetings

In a resolution declaring that its work is as important as that of any other part of the association, the Publicity Committee offered to the Executive Committee a new plan of organization following out the bureau plan adopted by the other sections. This was the first convention at which a definite part of the program was given over to the discussion of problems of the news and advertising departments of the member companies. Keen interest was shown in the papers presented by members of the committee and in the discussions which followed.

Included among the papers read was one on "Newspaper Advertising and Its Relation to News Publicity" by Frederick S. Myrtle, editor-in-chief of "Pacific Service Magazine," Pacific Gas and Electric Company. A companion paper, "Planting the News Story" by Charles Heston Pierson, supervisor of information, Southern California Edison Company, outlined the methods followed by that company in distributing news matter to the 178 papers in its territory and the means employed in checking its publication. Richard E. Smith, advertising manager, Southern California Edison Company, presented a paper on "Keeping in Touch with the Stockholder" which emphasized the necessity for keeping security holders advised of the operations of the company. "The Place of the Trade Paper in the Industry" was the subject of a paper read by George C. Tenney, managing editor, Journal of Electricity.

The new plan of organization of the section as outlined by M. W. Scanlon, Westinghouse Electric & Manufacturing Company, San Francisco, calls for the formation of a number of bureaus charged with the study of various problems of the news and advertising departments. Included among these are the Bureau of Information, which will act as a central clearing house for information regarding the indus-



ne Pacific Coast Electrical Association, Coronado, Calif., June 16-20, 1924.

try, the Better Business Bureau, and the Bureau of Technique. The Publicity Committee will be known in the future as the News and Advertising Section.

Purchasing and Stores, Personnel, and Accounting Sections Meetings

Meetings of the purchasing and stores, personnel and accounting sections were productive of active discussion and brought many constructive thoughts.

The meeting of the Personnel Section was well attended by members of personnel departments of various companies and by those utility presidents who were in attendance at the convention. A paper was presented by E. G. McCann, Pacific Gas and Electric Company, and was followed by lengthy discussion of personnel matters. It was the consensus of opinion that personnel departments must continue to function largely in an advisory capacity, lending their assistance wherever it may be desired or required. It was also felt that such departments must establish in the minds of department heads the value of personnel effort to the company.

Women's Public Relations Meeting

For the first time in the history of the association, the women who attended the convention were given a definite place on the program when a meeting devoted to them was held Wednesday, June 18. More than 50 women attended and displayed a keen interest in the affairs of the association and in the workings of the electrical industry. Miss J. Frances Emans of the Southern California Edison Company, chairman of the Women's Public Information Committee of the association, presided. Speaking about friendliness, she declared it a factor for success in the electrical industry as well as in any other business or profession. She introduced R. E. Smith of the Southern California Edison Company, who spoke on "The Smiles Club," to which every member of the electrical industry is supposed to belong. The club, organized six months ago, already has more than 30,000 men and women on its membership list, he said; its first purpose is tangible application of that intangible thing called courtesy; the initiation fee is a willingness to smile; maintenance of a cheerful disposition in all business associations pays the dues; and its philosophy is the age-old one that a smile can accomplish far more than a frown.

"Selling the Electric Idea" was the subject of a talk by Mrs. Helen Grahame. "Our present day civilization couldn't exist without the electrical industry," she said. "Electrifying your home and spreading your enthusiasm about the results is the best way to 'sell the electric idea.'"

Mrs. Grahame explained that most of the women present are in the electrical industry "by marriage."

George C. Tenney, managing editor of the Journal of Electricity, with that thought in mind, addressed his audience on "What the Women of the Electrical Industry Can Do to Improve Public Relations," and declared that the best thing a woman can do is to learn something about her husband's business.

In the discussion which followed the formal program, Mrs. W. L. Frost outlined a plan whereby the

women of the industry can do much in combating the California Water and Power Act.

Public Relations Section Meeting

The high spot of the entire convention was the meeting of the Public Relations Section held on Thursday, June 19, and presided over by R. E. Fisher, vice-president in charge of public relations and sales, Pacific Gas and Electric Company. At this meeting, which was an innovation as far as the Pacific Coast Electrical Association is concerned, R. E. Smith, advertising manager, Southern California Edison Company, presented a paper on "Common Sense in Public Relations," in which he declared that the real basis of public relations is in getting along with the public as individuals rather than as a mass.

He stated that the antipathy of the public toward utilities is due to the fact that it feels something is going on inside of these organizations which it cannot understand. When the searchlight of understanding is turned on, these misgivings disappear. When individual good will has been attained, group antipathy will disappear. The industry must be made so courteous and considerate, he said, that the public will believe that fact without being forced to read it in advertisements.

In his opinion there is a definite objection to the widely used slogan, "Educate the Public." Rather should the industry "educate the employee and inform the public" was his suggestion. He believed that the public resents being educated but is glad to be informed.

Mr. Smith's paper differed from the ordinary discussion on this subject in that not only did he point out the weaknesses in the industry's present public relations structure but he made definite and concrete suggestions as to how a better public attitude toward utilities might be created.

In commenting upon this paper, M. H. Aylesworth, managing director of the N.E.L.A., complimented Mr. Smith upon the paper and stated that he believed that it struck at the root of the question.

Miss J. Frances Emans, Southern California Edison Company, chairman of the Women's Public Information Committee, in reporting the work of her committee for the year, stated that a great deal more could have been accomplished if a better representation from the member companies had been present at the meetings. She so impressed the audience with the important character of the work of this committee that Al C. Joy, in behalf of the San Joaquin Light & Power Corporation, promised the fullest cooperation of his organization in the future.

The success of the "Smiles Club" was outlined in a report presented by R. A. Balzari, Westinghouse Electric & Manufacturing Company, San Francisco, who stated that over 30,000 members are now enrolled in the Courteous Service Club of the P.C.E.A. In the discussion which followed, it was pointed out that courtesy prompted by a sincere desire to please is the goal for which the industry must strive, and the movement in order to be lasting and efficacious must go deeper than an artificial smile and superficial courtesy. The "Smiles" movement was carried on largely through the agency of the various electric clubs of the state and the San Diego and Sacramento clubs were presented with handsome engraved gavels for having gone over 100 per cent in their efforts to secure members. Delegates from every electric club in the state answered to the roll call of Chairman R. E. Fisher. This is the first time that the electric clubs have actually participated in the activities of the association.

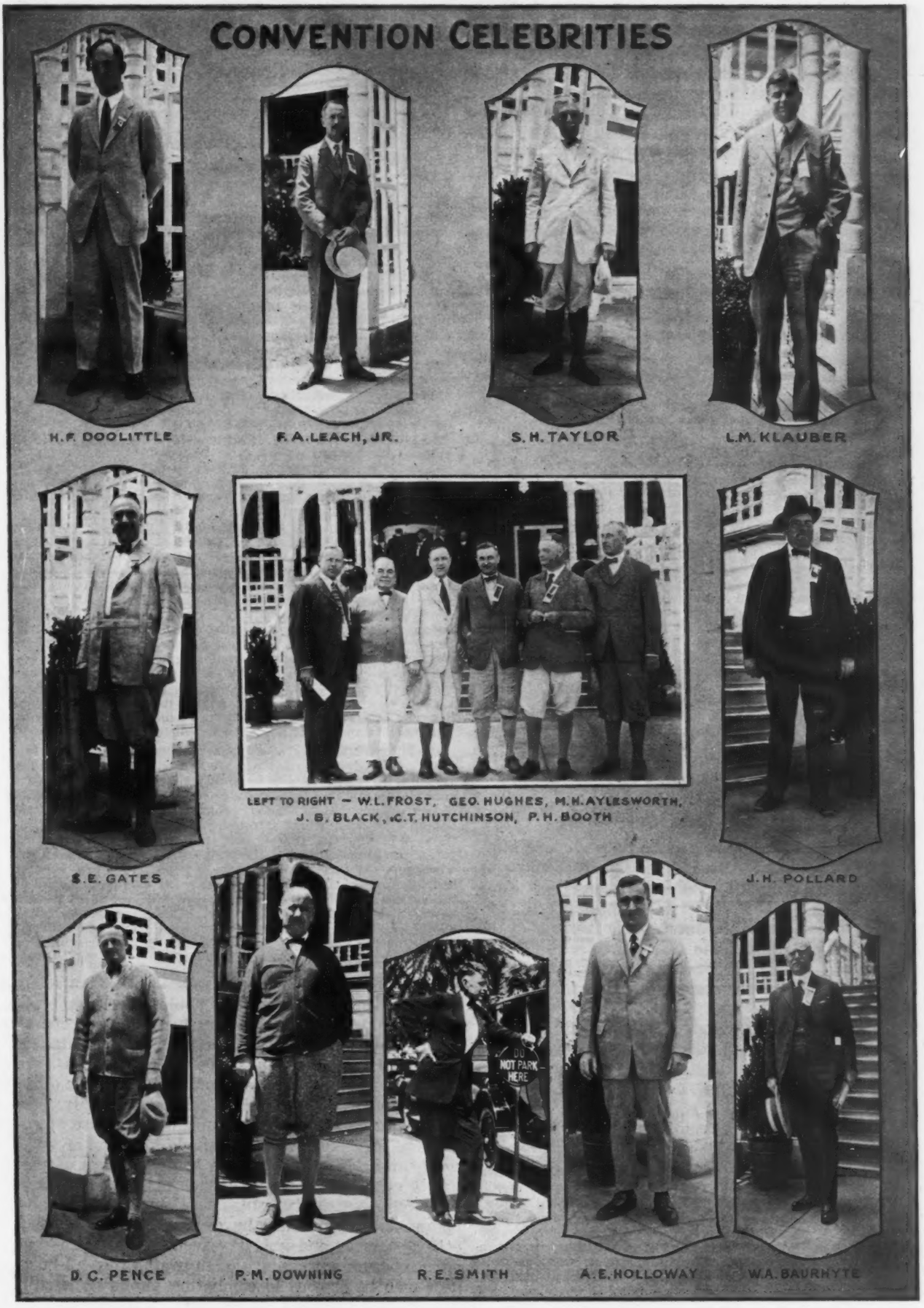
Second Business Meeting

Extending a unanimous invitation to the National Electric Light Association to hold its 1925 convention in San Francisco, the Pacific Coast Electrical Association at its second business meeting, Friday morning, addressed a resolution to the executive committee of the national organization outlining the advantages of that city as a convention center. With Franklin T. Griffith, president of the Portland Electric Power Company, as president, the Pacific Coast is certain of having the national gathering next year. The final choice will undoubtedly rest between San Francisco and Portland, Ore. In 1912 the convention was held in Seattle. In the resolution addressed to the national body, the Pacific Coast Electrical Association guarantees a registration of 2,000 from the Pacific Coast states.

The feature of this meeting was an address by M. H. Aylesworth, managing director of the N.E.L.A. Mr. Aylesworth spoke on "The Case Against Political Ownership," and bitterly assailed the misinformed proponents of government ownership for their socialistic proposals. He pointed out that while the Public Ownership League of America in its literature advocates a government-owned superpower system consisting of all municipally operated electric plants, such a system would represent but 4 per cent of the total generating output of the nation. He quoted from many of the most outstanding men in public affairs showing that they, to a man, do not favor the further participation of the government in the industrial life of the nation.

In commenting upon the public conception of superpower he showed how socialistic and political propagandists have taken advantage of this term in furthering their own ends by creating in the minds of the public a wrong impression of what the term means. He urged that utilities take immediate steps to correct this misconception. Electricity has been a boon to the farmer and is revolutionizing agriculture, he stated. He cited the strides which the "electrify" movement has made in the rural districts of California.

Private industry is ready to develop the Colorado River for the best interests of the nation, Mr. Aylesworth declared. He quoted from a report of the Federal Power Commission denouncing the plan for government construction of this project. He also quoted from a recent address by Secretary of Commerce Herbert C. Hoover before the National Electric Light Association in which Secretary Hoover, himself an engineer, congratulated the electrical industry upon the remarkable strides it has made and paid a high tribute to the genius and enter-


CONVENTION CELEBRITIES
H.F. DOOLITTLE
F.A.LEACH, JR.
S.H. TAYLOR
L.M. KLAUBER
S.E. GATES
LEFT TO RIGHT — W.L. FROST, GEO. HUGHES, M.H. AYLESWORTH,
J. B. BLACK, C.T. HUTCHINSON, P.H. BOOTH
J.H. POLLARD
D.C. PENCE
P.M. DOWNING
DO NOT PARK HERE
R.E. SMITH
A.E. HOLLOWAY
W.A. BAURHYTE

prise which have made the record of this industry possible. In his talk, Secretary Hoover declared that power development is not a function of the government but a task for private enterprise under state and federal regulation.

Mr. Aylesworth quoted one of the planks in the present Republican platform in which this party took a decided stand on the ownership of public utilities. The platform says:

"American industry should not be compelled to struggle against government competition. The right of the government to regulate, supervise and control public utilities and public interests, we believe should be strengthened, but we are firmly opposed to the nationalization or government ownership of public utilities. . . ."

In conclusion, Mr. Aylesworth said:

The entire nation views with great interest the battle for socialism in California. It has been stated time and time again that the attempt to place the state in industry and business is to be brought to an issue in the State of California, and it is well understood that this movement is similar to that which took place in North Dakota and which has practically wrecked that state.

The thinking men and women of this country have confidence in the sober judgment of the people of California, and believe that the proposed bond issue which would place a tax burden on the people of California in excess of any other state will be defeated by a greater vote than was cast at the last election.

May I take this opportunity to warn the industry that a continual program of honest information must be furnished to the people of this state, and that it is the duty of every man and woman engaged in the public utility industry of this state to inform the people of the dangerous doctrines of socialism that will be preached during the campaign which will soon be waged. It is your duty to make this fight in the interests of your state and your people. Do not hesitate to state your case, and you will eventually receive the thanks of a grateful people.

I know of no other state where the electrical industry has rendered greater service than it has in California. You have reason to be proud of your achievements and I am particularly grateful that your industry has that keen sense of appreciation of the opportunity to serve the public with the best service at your command at the lowest rates which will produce this service.

Public Service Conference

Emphasizing the necessity of closer cooperation between all public utilities, especially in considering their common problems and combating their common enemies, the Public Service Conference, Friday afternoon, was one of the outstanding features of the convention program. The feature address, "Public Service and Public Ownership," was delivered by Henry Swift Ives, secretary, Casualty Information Clearing House, Chicago. Mr. Ives clearly outlined the attack which is being made upon private industry of the nation by socialistic and political propagandists and urged that industry unite in meeting the attack. Mr. Ives said:

Government ownership of industry may be defined as the substitution of government deficits for private profits. It is taxation for confiscation. It is the first and last step in the socialistic seduction of democracy. It pretends to take away from those who have for the benefit of those who have not, but in reality it takes away from all to the injury of all. It is an attempt to subsidize mediocrity by penalizing genius, but actually the only effect of such a subsidy is to make mediocrity even more mediocre. It represses the reproductive processes of capital, and then tries to revive them by a tax gland operation. It is destructive of wealth growth and productive of debt growth. It makes politics instead of business the national dividend producer. It promotes waste and demotes saving. And its whole tendency leads directly to the ultimate absorption by the state of all private property rights. Government ownership spells the socialist millennium if carried out to its logical conclusion.

Such is the indictment of experience. The conspicuous government failures in the world have been in public ownership. But despite this record, which reads like a list of bank suspensions in a bank guarantee state, there has developed in this country a very healthy agitation for the adoption of a system here which hasn't worked anywhere else.

Industry and Government Cannot Merge

We are violently opposed in this country to permitting industry to run the government, but unfortunately there are many who actually favor government operation of industry. Both of these ideas of sovereignty are as old as the hills and as sterile as the desert. Each contemplates an autocracy. When industry tries to dictate to the state and when the state invades the legitimate sphere of privately conducted enterprise both are sowing the seeds of their own destruction. Too much business in government is almost as bad as too much government in business. The American people have had a brief taste of industrial domination, and now they are getting more than a taste of political domination of industry. It was easy to swing the pendulum back from the former situation to a dead center, but it is not so easy to stop the opposite swing towards complete socialization.

Political government is not adapted to industrial government, and industrial government is not suited for political government. These are two separate fields, and should be kept as far apart as possible. They may overlap in places, but under a democracy they never can merge without at the same time destroying democracy. There is little of economy and efficiency from a strictly business viewpoint in the administration of a democratic state. The same condition would be true in any industry if all those engaged in it were permitted an equal voice in its affairs. If our American kind of government was conducted with the same degree of expertness as some of our largest business corporations it would not long continue a democracy. And if American business was operated with the same degree of lassitude and incompetency as governmental affairs are generally it would go into bankruptcy before the taking of another inventory. Successful industrial development requires centralized authority of a kind which if exercised in a democracy would rapidly transmute it into an autocracy. In a word, we cannot have democracy and highly efficient and centralized political authority at the same time to any greater extent than we are able to conduct our business affairs without exactly the same kind of authority. The world war taught us that.

The socialists and radicals are keenly aware of the fact that democracy and capitalism are in reality twin institutions. In America today it will be found that those opposed to a continuation of our democratic form of government are not directing their thrusts nearly so much at our basic political concepts as they are at our industrial and economic institutions, well knowing that if they first destroy the latter the former automatically will become part and parcel of the wreckage. It is much easier and simpler to get a popular hearing for a denunciation of profits, for example, than it is for a fulmination against liberty; the demagogue finds that he can more advantageously excoriate the system which permits capital to grow and reproduce itself for the benefit of all the people than it is to inveigh against the principles of popular sovereignty.

Mr. Ives stated that the radicals were not solely responsible for the spread of public ownership propositions. It is his opinion that many large property owners and business men who are ardent capitalists in regard to their own property or business, are inclined to be just as ardent socialists when the other man's property is concerned. These men, Mr. Ives stated, do by their actions support the cause of socialism, forgetting that "no single industry or business can be lifted out of the common mass of privately conducted enterprise, endowed with the attributes of sovereignty, subsidized by taxation and operated by a political bureaucracy without every other business and industry feeling the depressing effect of such a procedure." In urging that all business men be zealous in combating public ownership

of their own industries and those of other industrial enterprises Mr. Ives continued:

To promote the right kind of cooperation among the property owners of the country in their fight against socialization I have heretofore suggested the organization of a "Private Ownership League." I see no reason to change my opinion as to the feasibility of such a move. The socialists have a "Public Ownership League," which is a heavily subsidized going concern, and unfortunately has among its membership many business men and property owners who have been lured by its fake altruistic appeals, or who have been misled by prejudices or biased by selfishness. Why, indeed, should not the property-owning classes, representing a large majority of the people of this country and nearly all of its wealth, have a league to safeguard their interest against malicious and insinuating socialist propaganda? If something like this is not done the public ownership movement may well get beyond all control.

You who are engaged in the electrical utility business are well aware of the continuing danger to that business from the government ownership agitation. You have been fighting it for years, in season and out of season, and just when the craze for municipal operation seems to have run its course, you are confronted with a new and greater menace in the proposal to socialize the superpower plan of tying electric systems together all over the country. You raised this giant, you trained him, you supplied his brains, you dedicated his services to human industry and the upbuilding of the nation. All you are asking in compensation for this is a fair return on the money you are spending and expect to spend to bring about the fullest and most economical utilization of the power resources of the nation for the benefit of all the people.

And now the state which has never lifted a finger to help you, which even has often hindered you, which has never contributed one dollar, one ounce of brains or one pound of initiative to this project, steps in and seeks to take control of it away from you and the 200,000 owners of your stocks and bonds. The very size of the superpower scheme has fascinated the demagogues and socialist leaders. They see either temporary spoils in the state control of this giant, or they see through this process a splendid opportunity to strike a heavy blow at the institution of private property, depending upon their personal interest and political viewpoint.

A similar suggestion was offered by C. P. Cutten, attorney, rate department, Pacific Gas and Electric Company, who addressed the meeting on "Public Service and Utility Cooperation." Taking for his theme the gathering which he was addressing, Mr. Cutten urged that the plan instituted at this convention be followed in the future with frequent conferences between representatives of all utilities, so that each might be familiar with the problems of the others and all might work in harmony.

Speaking on "Public Service and Competition," Ben S. Allen, public relations manager, Key System Transit Company, Oakland, stated that the only competition which is left for the utilities since they have been placed under the jurisdiction of regulatory bodies is the competition of rendering service. He declared that the utility's greatest asset is public confidence and urged that every step be taken to secure this confidence. He stated that utilities in order to succeed, must sell to the public their honesty of intent and competency of personnel and equipment to take care of the service job which they have undertaken.

A. H. Griswold, vice-president and general manager, Southern California Telephone Company, Los Angeles, talked on "Public Service and Financing" and outlined the progress which utilities have made in customer and employee ownership. Successful financing, he declared, is dependent upon good service, proper internal relations, proper relations with other utilities and proper relations with the public.

The meeting was presided over by Frank A. Leach, Jr., in the absence of R. H. Ballard, the chairman.

Banquet

The convention closed with the banquet Friday evening. C. T. Hutchinson, McGraw-Hill Company of California, acted as toastmaster in the absence of A. Emory Wishon, general manager of the San Joaquin Light & Power Corporation. The two speakers were General G. H. Harries, vice-president of H. M. Byllesby Company and general manager of the San Diego Consolidated Gas & Electric Company, and Chester H. Rowell, former publisher of the Fresno "Republican" and former state railroad commissioner.

General Harries treated the convention in a humorous fashion and among other things suggested that a committee on standardization of golf be appointed. He also recommended that early morning sessions be called for the purpose of greeting Aurora. He advised convention delegates to appoint a song leader so that songs might be sung in "series rather than in parallel."

"All on One Switchboard" was the subject of Mr. Rowell's address. He described his recent trip around the world and commented to some extent upon the political and business situation in Europe. He was particularly hopeful for the Dawes plan. He declared that politics is the chief obstacle to business restoration in the critical nations of Europe.

Prizes won in the golf tournament were presented to the winners during the course of the banquet by Al C. Joy.

Electric Range Maintenance Costs

By A. H. Kreul
Assistant Superintendent Meters and Service,
Portland Electric Power Company, Portland, Ore.

THE use of the domestic electric range has increased materially in the past few years. The comfort and convenience that this type of cooking apparatus provides, the possibility of cooking without attention and the sales promotion work of the various electric utilities—in which they have told the truth about electric cookery — have all resulted in an increased interest on the part of the housewife and in a sales volume that has in most instances exceeded expectations. In many cases range factories have been obliged to force production and there have been long delays in filling orders. It has been a not unusual experience for a power company to add to its lines more electric ranges in a single year than were connected to the system at the beginning of that

year or at the start of a sales campaign. This condition has been particularly true of Western central stations and many of these have made notable progress in the development of this class of load.

One of the most important factors in connection with the popularizing of the electric range has been found to be the matter of servicing. Various policies have been adopted by the different companies ranging all the way from full charge for labor and material for repairs to absolutely free maintenance with no charge for either labor or repair parts. It has been common practice to service free as to labor and repairs during the first year of service life of the range, the procedure being to charge back the parts cost during this period to the manufacturer and to absorb the labor charge. Of course, as is to be expected, the maintenance cost during the first year has been found in general to be the least of any year of apparatus service. This has led many companies to make no charge for labor at any time during the life of the device but to charge only for the material used, and this generally at company cost. Some companies, however, have adopted a policy, still in effect, of making no charge whatsoever for servicing ranges, the contention being that the electric range is still in the pioneer stage and that extra inducements are necessary to promote its popularity. The argument has also been advanced that the technicalities of construction of an electric range place it in a disadvantageous position as regards fuel ranges and that if a charge is made for keeping the range in working condition the electric range business must necessarily be retarded. Other companies have contended that the desirable characteristics of the range load make it an attractive type of business with low delivery cost and that for that reason the servicing costs could rightly be considered to be absorbed into the rate.

The Portland Electric Power Company, of Portland, Ore., some years ago adopted a policy of servicing ranges without cost to the consumer. This policy is still in effect and has been of considerable assistance over a five-year-period in the development of range sales and load. It has undoubtedly contributed largely to the improved public relations between the company and the consumer. During the year 1923, for example, the company added to its lines 1,466 new electric ranges, bringing the total to 3,081 ranges with a connected load of approximately 21,500 kw. When it is considered that this is largely off-peak load and that range revenue totals about $47 per year per range, it will be seen that the sales effort involved in placing this equipment on the line has been productive of profitable returns.

In order to know accurately what it costs to maintain free service of electric ranges the company installed a detailed accounting system for the purpose. This system takes account of every item entering into the servicing of ranges, as may be seen from the accompanying tables. It was expected to show by this detailed accounting not only what service costs were but also what particular part or parts of a range most often needed repair. It was felt that manufacturers would welcome this sort of information in order that they might strengthen weaknesses in their technical or mechanical construction and thereby place themselves in a favorable competitive position. It might be said here that manufacturers have always shown an eagerness to obtain results of service break-downs and have gladly given heed to the reports of the service department. As a result of these records, many changes have been made in range construction and many technical and physical weaknesses have been eliminated. From these service reports the central station has learned what equipment it can safely recommend to its consumers and has been able to guide purchasers in their selections.

The service cost system of this company shows in detail the cause of each service complaint and the total cost of the complaint as well as the cost of repair. Table I, for example, shows in detail the particular features of complaints during the period

TABLE I — CLASSIFICATION OF RANGE COMPLAINTS
July to December, inclusive, 1923.

Open Coils in Hot Plates	
440 watt	40
500 watt	107
667 watt	214
750 watt	9
1000 watt	106
1500 watt	24
Open Hot Plates Complete	
440 watt	31
1000 watt	199
1500 watt	59
2000 watt	0
Closed Hot Plates	
1000 watt	109
1500 watt	88
1200 watt	2
2000 watt	0
Open Elements	
500-watt coils	0
750-watt coils	6
Open wire	78
Sheath wire	16
Switches	
Repaired	127
Replaced	211
Oven Contact Plugs	
Repaired	60
Replaced	20
Top Contact Plugs	
Repaired	84
Replaced	60
Ovens Relined	
Relined	18
Repainted	3
Repaired	0
Thermometers	
Adjusted	77
Replaced	75
Contacts	26
Clocks	
Repaired	5
Replaced	57
Automatic Switches	
Repaired	66
Replaced	24
Wiring	
Shorts	19
Grounds	45
Opens	69
Loose connections	36
Reflectors replaced	44
Oven Doors repaired	65
New Ranges installed	667

from July, 1923, to January, 1924. This record is made up daily as the service repair slips are turned in by the repairmen and the list of material used furnishes the desired information for showing the cause of break-down. The report itemizes the cause of failure, as, for example, switches; oven lining;

thermometer; clock; automatic switch; coils; hot plate—both open and closed types—etc. This information has been of material value to the manufacturers as it has indicated directly the defects in their products and it has already been instrumental in many cases in bringing about improvements in different parts of various makes and models of equipment.

TABLE II — RANGE SERVICE COSTS FOR 1923

Ranges in service Jan. 1, 1923, 1,615
Ranges in service Jan. 1, 1924, 3,081
Average ranges in service, 1923, 2,348
Labor cost, 1923, $5,600.12
Material cost, 1923, $8,414.01
Cartage cost, 1923, $1,545.21
Total cost, 1923, $15,559.34
Labor cost per range, $2.38
Material cost per range, $3.59
Cartage cost per range, $0.66
Total cost per range, $6.63

There seems to be a large demand for automatically controlled ovens and there seems likewise to be room for a great deal of improvement in such devices now in use. Unless the automatic feature can be depended upon by the consumer to operate satisfactorily this demand is liable to be short lived on account of lack of confidence on the part of the buyer.

TABLE III — RANGE COMPLAINT COSTS—1923

Total complaints, 6,059
Average ranges in service, 2,348
Complaints per range, 2.5
Labor Cost, 1923, $5,600.12
Material cost, 1923, $8,414.01
Cartage cost, 1923, $1,545.21
Total cost, 1923, $15,559.34
Labor cost per complaint, $0.92
Material cost per complaint, $1.39
Cartage cost per complaint, $0.26
Total cost per complaint, $2.57

Table II is of particular interest to central stations as it shows at a glance the maintenance cost of ranges. Of particular note in this table is the cost of material used in making repairs. This cost amounts to about 54 per cent of the total maintenance charge and increases appreciably with the age of the range. No definite ratio of maintenance cost to age of equipment has yet been worked out, but the service cost has been found to increase heavily as the range becomes older in service. No charges are included in this table to cover the cost of material proving defective within the first year of service life, as these charges have been made back against the manufacturer and are not considered a part of the service cost of this central station. Labor costs amount, roughly, to about 33-1/3 per cent of the total and the balance is made up of minor items such as drayage, etc.

Table III is an analysis of range complaint costs. It will be noted that the average cost per complaint for the period under review is $2.57. In view of the fact that the average number of ranges in service during the period of this report was 2,348, it will be seen that there was an average of slightly more than two and one-half complaint calls per range. This is not a serious matter as the major portion of these calls were for matters having to do with the operation of the equipment and not with maintenance. It should be stated, however, that this expense is seldom realized by the consumer and almost never receives his consideration. This matter of free service is a salient sales point and can well be emphasized by the sales forces of those companies whose policies are formulated along that line.

The installation of a range forms an item of considerable expense. This expense, however, is absolutely necessary and there seems little possibility of reducing it by any appreciable amount. As shown in Table IV, it is composed of labor, cartage and material. Here again the labor cost is the major item in the total. This labor item contains not only the time of draymen but also includes the time of uncrating, setting up, burning off the elements and making the electrical connections to the house wiring. This company does not do the housewiring necessary for the range itself but does make the connection from the outlet box on the range to the wiring. This table does not show the cost of running outside loop or of setting meter, where new meter is required.

A comprehensive idea of the cost of servicing electric ranges over a period of years may be obtained from Table V which shows the average service cost for each of five consecutive years. The influence of the labor cost is well shown in this table for, during the years of the war, when labor exacted its own price, the average cost was much higher than either before or since that time.

TABLE IV — RANGE INSTALLATION COSTS—1923

Total ranges installed, 1,361
Labor cost, $10,257.02
Material cost, $4,728.41
Cartage cost, $1,481.24
Total cost, 1923, $16,466.67
Labor cost per range, $7.53
Material cost per range, $3.47
Cartage cost per range, $1.09
Total cost per range, $12.09

The range organization of this company now consists of a foreman; three service men with automobiles fully equipped with a large stock of repair parts for all makes of range; two installers, with helpers, operating two trucks in delivering and setting up ranges; and two shop men who uncrate and burn off new ranges and repair old ranges that are to be put into service. During special range campaigns the deliveries frequently run as high as twelve per day and at such times an extra crew, with a third machine, is added to the regular force in order to meet the demand for immediate deliveries.

The demand for the electric range is increasing rapidly and, with the growth in population and the increase in new residences, apartments, flats, etc., it is apparent that this increase will be maintained for some time to come. This seems to be especially assured in those territories where the central station has adopted a liberal service policy.

TABLE V — RANGE SERVICE COSTS

Year	Ranges in Service Dec. 31	Average Ranges in Service	Number of Complaints	Complaints per Range	Labor Cost	Material Cost	Cartage Cost	Cost per Complaint	Total Cost per Range
1919	620	456	1,153	2.5	$3.96	$1.56	Included	$2.18	$5.52
1920	782	701	1,506	2.1	4.54	3.34	in material	3.67	7.88
1921	1,082	846	2,009	2.3	5.31	2.53	" "	3.30	7.84
1922	1,615	1,348	3,141	2.3	3.30	4.08	" "	3.17	7.38
1923	3,081	2,348	6,059	2.5	2.38	3.59	$. 66	2.57	6.63

The COAST Outlet
ELECTRICAL CONSTRUCTIONISTS' and DEALERS' NEWS

Electrical Construction

By E. Earl Browne

THE three preceding articles have dealt with sample estimating forms, by the use of which the work of making up a bid on a job was greatly minimized. The principal steps in taking off the quantities of material and labor from a plan will be taken up now. Every person has his own ideas as to the procedure. In the final analysis, however, it is the accuracy of the methods employed and the carefulness of the estimator that count.

It is, in the writer's opinion, necessary first to read the specifications in order to pick out any special features called for therein that would not be shown on the plans. As an example, if fixtures are to be furnished and installed and the various types are specified, it would save considerable time if the outlets were counted up as fixtures of the various types and sizes and thereby save the time entailed in first counting up the outlets and then going over the plans again to pick off the fixtures. Figs. 8 and 9 show the same job as in Fig. 1 on page 324 of the May 1 issue of the Journal of Electricity, except that the fixtures have been added into the contract.

After all special and unusual things called for in the specifications have been carefully noted in their proper place on the estimating forms, it is good procedure, in order to become familiar with the plans, to count the outlets, switches, etc., directly from the plans. This is best done by aid of colored pencils or crayons, using one color for light and power outlets and another for telephone, bell and other signal outlets. A black pencil should not be used as the mark on blue prints is harder to see and is more difficult to erase.

After this is done, if the job has not been laid out by a competent engineer, the next step is to rough out the circuit runs with crayons. This then gives an opportunity to check accurately the pipe entrances into outlets, if the estimating system of the Association of Electragists is used. If this sys-

ARCH'T W. F. Jones LOCATION S. Mission St. 80'8.11th St SCALE 1/4" ESTIMATE NO. 486
OWNER A. H. Smith BID TO Architect DATE 2/1/24 HR. 12 M. BID PRICE $ DATE 2/28/24

FLOOR	CEILING HEIGHT	Fixtures + OUTLET (WATTS) 40 A	60 A	100 B	200 B	100 C	300 C	300 C			SWITCHES S. P.	3 W	4 W	LOCK	DOOR		RECEPTACLES SINGLE CONV.	DUPLEX CONV.	20 AMP. CONV.	FLOOR	BOX	SIGN
BASEMENT		6	0	9	0	0	0	0			3			0			0					
1ST		2	4	8	0	0	0	14			5			2			1					
MEZZANINE		—	—	—	—	—	—	—			—	—		—			—					
2ND		2	1	5	5	5	5	0			17			0			2					
3RD		2	1	5	5	5	5	0			17			0			2					
4TH		2	1	5	5	5	5	0			17			0			2					
5TH		2	1	5	5	5	5	0			17			0			2					
Roof ent		1	0	0	0	0	0	0			0			0			0					
7TH																						
8TH																						
9TH																						
TOTALS		17	8	20	20	20	20	14	119		76			2			9					

Fig. 8.

tem is not used, this step is not necessary. The next step is to measure off the various sizes on circuit conduits and tabulate them in some manner as shown in Fig. 2, page 325, Journal of Electricity for May 1, 1924, and Fig. 4, page 363, Journal of Electricity for May 15, 1924. This is one point in the work where a great many estimators make a mistake. They will take off all the ½ to 1-in. circuit from one floor and write it down as a total of that size for that floor and so on through the various sizes and combinations. This, to the writer, always seems an easy way to overlook some runs of conduit. In the writer's opinion it is better to follow the 1-in. conduit with four circuits from the panel board to its conclusion in reference to the four circuits and write down its length. Then take the 1-in. conduit with three circuits through from its length and so on with the ¾-in. conduit with two circuits; ½-in. with two circuits; ½-in. with one circuit. This may seem to involve more writing and tabulation than the other system, but greater accuracy will be obtained, and it has the added advantage that if one is interrupted it is not necessary to go over the floor plan a second time on returning to the work.

MATERIAL LABOR-SUMMARY

QUANTITY	MATERIAL	MATERIAL UNIT	MATERIAL EXTENSION	LABOR UNIT	LABOR EXTENSION
119	Ceiling and Bracket Outlets, Complete				
76	S. P. Push Switches, Complete				
	3-W " " "				
	4-W " " "				
2	Lock " " "				
9	Convenience Outlets, Complete { Single / Duplex / 20 Amp. }				
	Floor " "				
2300	½-in. Conduit, (Galv. or Black) 2 #14 Wires				
	½-in. " " " 3 #14 "				
	½-in. " " " 4 #14 "				
	½-in. " " " 2 #12				
	¾-in. " " " 4 #14 "				
260	¾-in. " " " 3 #12 "				
	¾-in. " " " 2 #10 "				
110	¾-in. " " " 3 #10 "				
	¾-in. " " " 2 # 8 "				
	1 -in. " " " 6 #14 "				
	1 -in. " " " 8 #14 "				
	1 -in. " " " 3 # 8 "				
	1 -in. " " " 2 # 6 "				
	1¼-in. " " " 3 # 6 "				
	1¼-in. " " " 2 # 4 "				
	1¼-in. " " " 3 # 4 "				
	1½-in. " " " 3 # 3 "				
	1¼-in. " " " 2 # 2 "				
	1½-in. " " " 3 # 2 "				
40	1½-in. " " " 3 # 1 "				
	2 -in. " " " 3 # 0 "				
	2 -in. " " " 3 #2/0 "				
	2 -in. " " " 3 #3/0 "				
	2½-in. " " " 3 #4/0 "				
2	Panel Boards, Complete (6) Circuits				
4	" " " (4) "				
	" " " ( ) "				
	" " " ( ) "				
	" " " ( ) "				
1	Service Switch, " (100A) (250V) (3 P)				
	" " " (A) (V) (P)				
	" " " (A) (V) (P)				
6	Sub Feeder (30 A) (250V) (3 P)				
	" " " (A) (V) (P)				
	" " " (A) (V) (P)				
	" " " (A) (V) (P)				
	" " " (A) (V) (P)				
	" " " (A) (V) (P)				
	" " " (A) (V) (P)				
	" " " (A) (V) (P)				
	" " " (A) (V) (P)				
17	Type "A" -- 40 W. fixtures				
8	" " " -- 60 W. "			✓	✓
20	" "B" -- 100 W. "			✓	✓
24	" " -- 200 W. "			✓	✓
24	" "C" -- 100 W. "			✓	✓
20	" " -- 200 W. "			✓	✓
14	" " -- 300 W. "				✓
325	Incidentals Inspection Labor				

Fig. 9.

A Practical System of Accounting for Contractor and Dealer

By F. V. Mitchell

IN an accounting system it is possible to furnish as much departmental analysis of the business as the management desires, but the writer has found in his experience that the following departmental segregation affords the average electrical firm a sufficiently detailed analysis of its operations:

1—Wiring
2—Fixtures
3—Store

Department No. 1 includes all outside construction and repair work. Department No. 2 includes the sale and installation of all electrical fixtures. Department No. 3 includes all other store sales, principally electrical appliances, lamps and radio supplies. If the appliance or radio business is sufficiently large to warrant the appointment of an individual in charge, for instance, it will be found expedient to separate these from the other miscellaneous store sales and include the two additional departments in the segregation.

In the April 15, 1924, issue of the Journal of Electricity was presented a sample page of the Combined Cash Book-Journal for the small electrical store that did not require departmental segregation, and at that time attention was called to the fact that through the use of fly-leaves this book could be expanded to meet the requirements of just such department analysis as has been referred to above. In Fig. 1 is outlined how the entries would be made for departmental sales and costs, and in Fig. 2 for departmental expenses.

As will be readily noted, the principle of entering transactions is identically the same as in the original form, the only difference being that each entry is distributed according to department in the proper columns provided for that purpose. Each item of expense should be allocated direct to a department whenever possible and when unable to do so, the amount that cannot be directly applied to a department should be entered in the General column under its proper caption of expense. The total amount in the General column of each expense account at the end of each month is distributed over the departments on the basis of sales, each department being charged with the same percentage (or ratio) of the unapplied amount that its sales bear to the total sales for the month.

The item of Rent should be distributed directly over the departments on the basis of actual floor space occupied, and once this measurement is determined it becomes a fixed departmental distribution each month until there is any material change in the amount of floor space occupied by the departments. The item of Fire Insurance on Stock should be distributed directly over the departments on the basis of physical inventory taken on the first of each calendar year and, unless there is actually known to be a material change in the amount of stock carried on hand in the departments at some time during

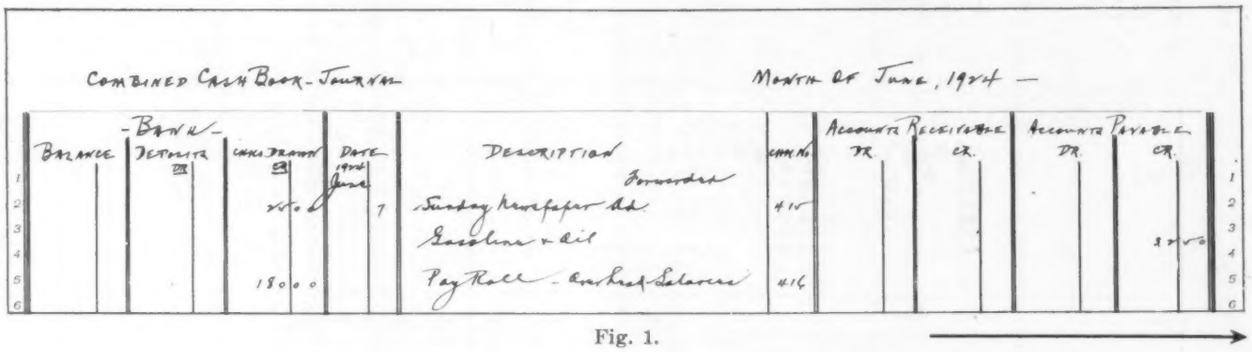


Fig. 1.

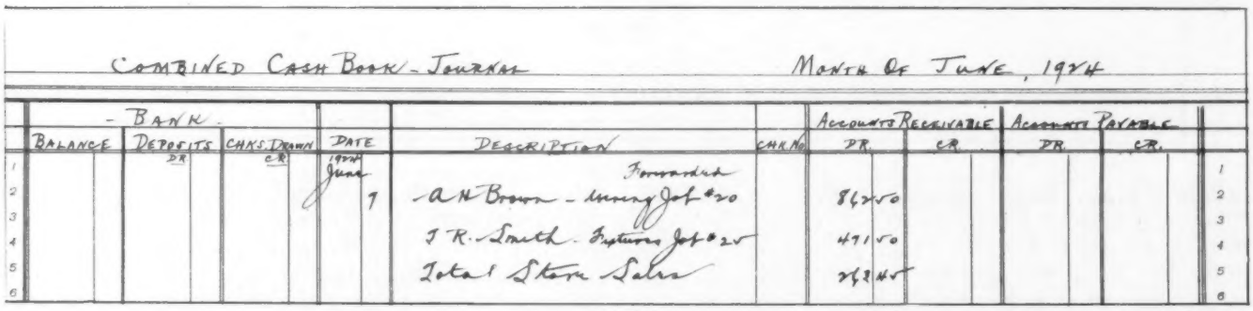


Fig. 2.

the year, this ratio so determined on the first of the calendar year is used for departmental distribution each month throughout that year. The last two items are the only exceptions to the rule of the distribution on the basis of sales, of expenses not incurred specifically for a department. As it is a proven fact in business that sales create overhead, there can be no fairer method of distribution used than this in which the departments having the larger amount of sales are charged with the larger percentage of the general overhead, or unapplied expense.

It will also be noted in Fig. 1 that the amount debited to Costs is credited direct to Merchandise and Labor Accounts, and that under this method there is no attempt made to apportion the overhead to each wiring or fixture job. There is no Work in Process Account used under this method, and the amount of material and labor on jobs in process and unbilled at the end of each calendar year should be included in the value of the physical inventory taken to prepare an accurate Profit and Loss Statement. Under this plan the bill for roughing-in charge

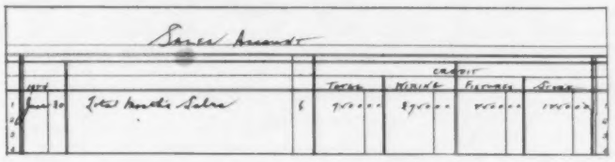


Fig. 3.

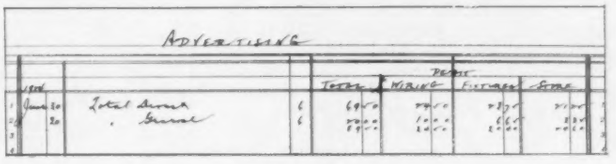


Fig. 5.

The Sales Account in the General Ledger, as outlined in Fig. 3, contains an illustration of the monthly entries for departmental sales, the Cost of Goods Sold Account in Fig. 4 for departmental costs,

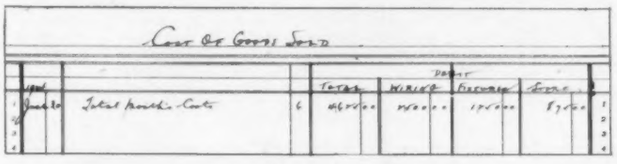


Fig. 4.

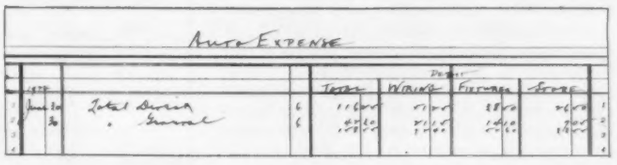


Fig. 6.

and Advertising and Auto Expense Accounts in Figs. 5 and 6, respectively, for departmental expenses. It will be noted how the amounts that would appear as totals of the General columns of these two expense captions in the Combined Cash Book-Journal are distributed over the departments on the basis of sales.

should be entered in the Combined Cash Book-Journal, with the cost of the job up to that point, at the time this bill is rendered for collection purposes, and when the job is completed, the bill for the finish should be entered, with the cost of that portion of the work. At the time the roughing-in charge is posted, a notation should be made upon the customer's account of the amount of the balance (or finish) of the contract to be billed upon its completion.

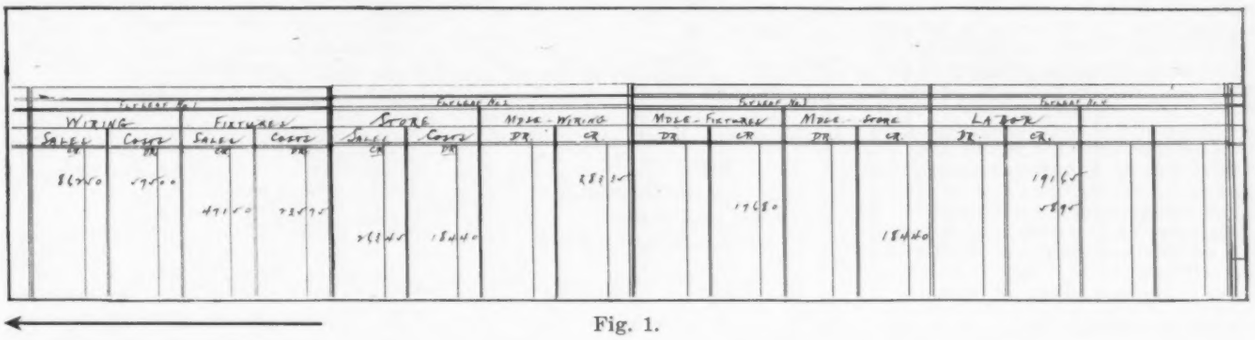


Fig. 1.

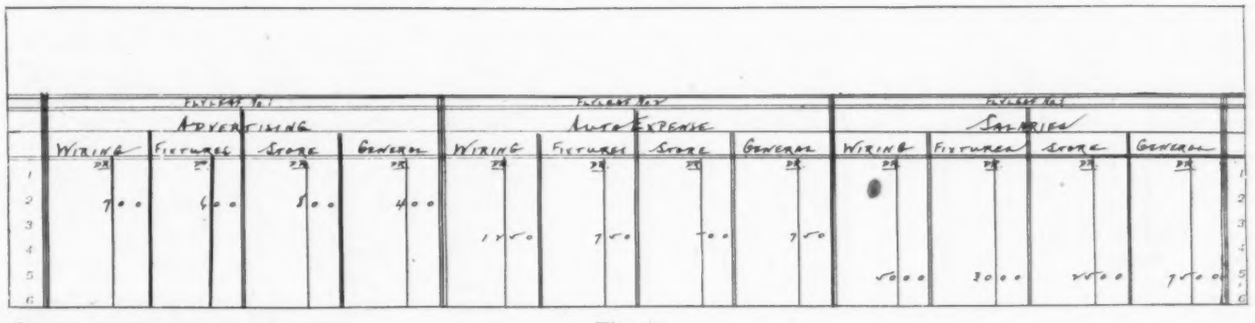


Fig. 2.

Standard Symbols for Plans Are Prepared by Electragists

Many different symbols have been used in the past for indicating the same device or outlet on plans, drawings and blue prints. This has often resulted in confusion and has always made it difficult to figure plans as it has been necessary to ascertain what was meant by any given set of symbols. This matter of a common style of marking plans has received attention from many sources, including contractors' associations, architects, and others.

The Association of Electragists, International, the American Institute of Architects, and the American Institute of Electrical Engineers have recommended and adopted and the American Engineering Standards Committee has approved the symbols reproduced herewith. This scheme of indicating electrical installations was worked out by the Association of Electragists, International, after some years of consideration of the matter and after several different plans had been reviewed. It is hoped that by a uniform application of these symbols the labor of estimating may be lightened and that the possibility of misunderstanding may be eliminated.

The California State Association of Electrical Contractors and Dealers has prepared a sheet showing all of the approved symbols and has distributed these sheets to architects, engineers, contractors, builders and others in order to promote a common use and understanding of the markings.

STANDARD SYMBOLS FOR WIRING PLANS
As recommended and adopted by the Association of Electragists, International, The American Institute of Architects and the American Institute of Electrical Engineers, and approved by the American Engineering Standards Committee on March 6th, 1924
Ceiling Outlet
Ceiling Outlet (Gas and Electric)
Ceiling Lamp Receptacle
Specification to Describe Type Such as Key, Keyless or Pull Chain
Ceiling Outlet for Extensions
Ceiling Fan Outlet
Pull Switch
Drop Cord
Wall Bracket
Wall Bracket (Gas and Electric)
Wall Outlet for Extensions
Wall Fan Outlet
Wall Lamp Receptacle
Specification to Describe Type Such as Key, Keyless or Pull Chain
Single Convenience Outlet
Double Convenience Outlet
Junction Box
Special Purpose Outlet
Lighting, Heating and Power as Described in Specification
Special Purpose Outlet
Lighting, Heating and Power as Described in Specification
Special Purpose Outlet
Lighting, Heating and Power as Described in Specification
Exit Light
Floor Outlet
Floor Elbow
Floor Tee
Local Switch—Single Pole
Local Switch—Double Pole
Local Switch—3 Way
Local Switch—4 Way
Automatic Door Switch
Key Push Button Switch
Electrolier Switch
Push Button Switch and Pilot
Remote Control Push Button Switch
Tank Switch
Motor
Motor Controller
Lighting Panel
Power Panel
Heating Panel
Pull Box
Cable Supporting Box
Meter
Transformer
Branch Circuit, Run Concealed Under Floor Above
Branch Circuit, Run Exposed
Branch Circuit, Run Concealed Under Floor
This Character Marked on Tap Circuits Indicates 2 Number 14 Conductors in 1/2" Conduit
This Character Marked on Tap Circuits Indicates 3 Number 14 Conductors in 1/2" Conduit
This Character Marked on Tap Circuits Indicates 4 Number 14 Conductors in 3/4" Conduit Unless Marked 1/2"
This Character Marked on Tap Circuits Indicates 5 Number 14 Conductors in 3/4" Conduit
This Character Marked on Tap Circuits Indicates 6 Number 14 Conductors in 1" Conduit Unless Marked 3/4"
This Character Marked on Tap Circuits Indicates 7 Number 14 Conductors in 1" Conduit
This Character Marked on Tap Circuits Indicates 8 Number 14 Conductors in 1" Conduit
NOTE—If larger conductors than number 14 are used, use the same symbols and mark the conductor and conduit size on the run
Feeder Run Concealed Under Floor Above
Feeder Run Exposed
Feeder Run Concealed Under Floor
Pole Line
Push Button
Buzzer
Bell
Annunciator
Interior Telephone
Public Telephone
Clock (Secondary)
Clock (Master)
Time Stamp
Electric Door Opener
Local Fire Alarm Gong
City Fire Alarm Station
Local Fire Alarm Station
Fire Alarm Central Station
Speaking Tube
Nurse's Signal Plug
Maid's Plug
Horn Outlet
District Messenger Call
Watchman Station
Watchman Central Station Detector
Public Telephone—P B X Switchboard
Interconnection Telephone Central Switchboard
Interconnection Cabinet
Telephone Cabinet
Telegraph Cabinet
Special Outlet for Signal System
As Described in Specification
Battery
Signal Wires in Conduit
Concealed Under Floor
Signal Wires in Conduit
Concealed Under Floor Above
California State Association of Electrical Contractors and Dealers

Symbols that have been standardized for use in indicating electrical construction work. The use of these markings on plans will tend to simplify many of the problems of estimators.

New Radio Shop Is Established at Sacramento, Calif.

One of the recent radio shops to open in Sacramento, Calif., is the Radio Equipment Company at 1015—13th Street. The proprietor, Frank D. Bennett, will deal in radio goods exclusively. Mr. Bennett began his career in the electrical industry as an automobile electrician, after which he spent twelve years in radio work in the army signal corps. He then went with the Radio Manufacturing Company of Portland, Ore. For the past year and a half he has been manager of the radio department of the Weinstock-Lubin Company of Sacramento. Mr. Bennett has been active in Association work, being a director of the Sacramento Valley Electrical Society and chairman of its program committee. He is also a member of the Sacramento Radio Dealers' Association.

Merchandising Helps on Irons and Ironers

The 96-page, illustrated manual, prepared by The Society for Electrical Development to assist retailers to sell more irons and ironers is now off the press. Non-members of the Society can obtain copies of this manual by writing to the above organization at 522 Fifth Avenue, New York, N. Y. Price, $1 per copy.

Monterey District Electrical League Is Organized

At a dinner meeting held recently, in Hotel Cominos at Salinas, Calif., forty-five representatives of the electrical industry organized the Electrical Development League of the Monterey Bay District. The purpose of this organization is to bring the electrical contractor, dealer and power company men together at monthly meetings for general discussion of their common problems to the end that the public may be better served; and it is planned to bring to these meetings, from San Francisco and elsewhere, speakers qualified to bring to the local electrical men the experience and activities of the electrical industry in other sections of the state, the findings of the electrical research laboratories and other valuable information and data.

J. F. Pollard, of the Coast Valleys Gas & Electric Company, presided as temporary chairman pending the election of officers, at which time the following were selected: E. Roy Nash, Monterey Electric Works, Monterey, president; Walter Cox, Cox Electric Company, Santa Cruz, vice-president; Morris F. Wales, Coast Counties Gas & Electric Company, Salinas, secretary-treasurer.

The speaker at the initial meeting was Arthur E. Rowe, of San Francisco.

Changes Announced in Salt Lake Wiring Ordinance

Enclosed Indicating Entrance Switches Required Together with Other Provisions for Better Installations

The following ordinance amending sections 607, 610 and 1272 of the Revised Ordinances of Salt Lake City, Utah, 1920, with respect to electrical installation and wiring came into effect May 12, 1924:

Section 607. Each application for a permit to install **electric wiring consisting of more than** eight (8) lighting circuits, or more than four (4) motors, or more than four (4) electric ranges, must have attached thereto a sketch or blue print, showing in detail the proposed method of installing wiring and apparatus.

Section 1272. Contracting Electrician. It shall be unlawful for any person to engage in, commence, conduct or carry on the business of a contracting electrician without first obtaining a license so to do. The license fee payable under this section shall be Twenty-five Dollars ($25.00) per annum. For the purpose of this section contracting electrician shall be defined as any person having an established place of business in Salt Lake City and regularly engaged in the business of installing electrical wiring, fixtures, apparatus, or appliances for furnishing light, heat or power, telegraph, telephone, district messenger or other electrical work.

Section II. (e) All conductors entering buildings from overhead lines shall be enclosed in approved rigid metal conduit having weatherproof threaded joints and equipped with approved service head, and all wires of same circuit shall be placed in the same conduit. When approved by the City Inspector, armored, flexible cable may be used instead of rigid metal conduit.

For low potential systems except where switchboard is installed, the inner end of service conduit shall enter an approved metal service cabinet enclosing service switch and service fuse or fuses. This metal service cabinet shall be grounded, and shall be of such construction as to indicate plainly whether service switch is open or closed, and to allow the operation of the switch from the outside of the box without opening the box or exposing any current carrying parts. The construction shall be such that the switch in itself serves for load controlling, switching or meter testing purposes, and when used for testing purposes, it shall have at least one protecting fuse in circuit at all times. This metal service cabinet shall have a hinged cover, so arranged that the cabinet may be sealed, either by the company supplying the current or by the City Inspector.

(f) All meter loops up to and including 100 amperes shall be controlled by switches equipped with testing clips and the service cabinet shall be of such construction as to receive the standardized meter trims which the company supplying the current shall provide. These service cabinets shall be installed with blank end-walls.

(g) All wires hereafter installed for furnishing light, heat or power in any building in the districts known as fire limits No. 1, No. 2, and No. 3 must be in conduit.

(h) All buildings hereafter erected, to be used for public or industrial purposes, such as churches, stores, halls, school buildings, garages, manufacturing establishments and warehouses must be wired in conduit. All apartment houses more than one story high containing five or more apartments or rooms, must be wired in conduit.

(k) All plug outlets or receptacles placed less than five feet above the floor must be of the parallel plug type.

(l) All branch cutouts must be enclosed in metal boxes.

Job signs used to indicate adequate wiring of homes.

New Job Signs in Strong Appeal for Adequate Wiring

A new job sign, designed to stimulate more and better wiring, has recently been produced by the California Electrical Cooperative Campaign. This sign, which reads, "This House Equipped with Electrical Convenience Outlets," is placed by the electrical contractor on all jobs where there is specified at least one convenience outlet for each room. The message to the passing public leaves the inference that an especially complete electrical installation is being made, and when supplemented by the job sign of the contractor, produces excellent publicity.

Another new job sign recently seen on buildings to be supplied with electric service by the Great Western Power Company states that an electric range is being installed. This sign is placed on the new premises by the company as soon as the range is sold, and ties in admirably with the other two signs, adding materially to the force of the electrical story that is being told.

Two of the accompanying pictures show the design of the signs of the power company and the Cooperative Campaign, and the third shows them both in place on the new home of F. E. Lupie, Sacramento, Calif., together with the regular job sign of Clifford Prudhomme, Sacramento electrical contractor, who is making the electrical installation.

Sacramento Valley Electrical Society Holds Meeting

The regular meeting of the Sacramento Valley Electrical Society was held Wednesday evening, June 11, at the Hotel Land, Sacramento, Calif. Harold Willis, president of the society, officiated.

The program was in charge of the Automotive Electrical Division of the society. G. T. Lundlee, in a short talk on the automotive electrical industry, spoke of the work of the Automotive Electric Service Association and its educational campaigns to elevate the standards of the industry. A film of the Northeast Electric Company showed some interesting details of the history and use of automotive equipment.

The principal speaker of the evening was Frank H. Probert, dean of the College of Mines of the University of California, Berkeley, who addressed the gathering on "The Romance of Mining," tracing the development of the industry from the beginning down to the present time.

Bert F. Hughes, manager of the department of mines of the Sacramento Chamber of Commerce, directed attention to the fact that the twenty-seventh annual convention of the American Mining Congress is to be held in Sacramento in September. He gave it as his opinion that the development of mining in California is dependent upon the electrical industry and the electrification of the gold mines, pointed out the interdependence of the two industries and urged their cooperation. J. F. Callbreath, secretary of the American Mining Congress, Washington, D. C., and George A. Stahl, Colorado representative on the board of governors of that organization, were among the guests. Several violin solos were played by Russell Keeny, with piano accompaniment by Miss Sleeper.

During the course of the meeting Mr. Willis was selected to represent the society at the annual convention of the Pacific Coast Electrical Association at Coronado, Calif. Announcement was also made that the Sacramento society had tied with the San Diego Electric Club in the "Smiles" Campaign in connection with the Courteous Service Club. R. T. Stephens and Roy N. Phelan were team captains in the drive made by the Sacramento Valley Electrical Society.

San Leandro, Calif., Fixes License Fees for Electrical Contractors.—An ordinance recently adopted by the city of San Leandro, Calif., provides for two classes of licenses, namely, Class A—$25 per year for an electrical contractor, and Class B—$12 per year for an industrial plant that does its own electrical work. A table of inspection fees is provided in the ordinance, and a deposit of $50 required as a guarantee that its terms will be complied with. It is suggested that electrical contractors doing business in San Leandro apply to J. J. Gill, city clerk, or F. C. Colville, recently appointed city electrician, for a copy of the ordinance.

Cooperative Electric Company, Oakland, Calif., has moved from 640 Thirteenth Street to 3937 Grove Street in that city. The company will continue to engage in merchandising electrical devices, fixtures and radio supplies and will maintain its electrical construction department.

Accounting Problem Questions Answered by Expert

The Journal of Electricity has made arrangements with F. V. Mitchell, public accountant of San Francisco, to answer, in these columns, such questions as may be asked on accounting. All readers are invited to forward their inquiries to The Editors, Journal of Electricity. The answers will be published as soon as possible following the receipt of the inquiry.

Question:

Is it necessary to put expense items paid during the current month through Accounts Payable when entering in the Combined Cash Book-Journal?

Answer:

It is not necessary to enter expense items paid in the month in which they are incurred, in Accounts Payable. These should be charged direct to the proper expense caption when paid, as the only reason for entering an expense item through Accounts Payable is to get it charged against the proper month's operations when it is not paid during the month incurred.

JOBBER, DEALER AND SALES AGENT

Decorate Windows and Interiors to Increase Sales

Thomas Day Company, Oakland, Calif., Utilizes Show Room Space and Windows to Display Fixtures and Appliances

To develop business through the use of specialized window trims and a close attention to every opportunity to make customers out of prospects has been the aim and the achievement of the Thomas Day Company of Oakland, Calif. Coupled with these two things has been an active merchandising program that has been conducted in the store itself when customers have called to make some purchase. The success that the Oakland dealer in fixtures and appliances has had bears evidence to the fact that a well balanced sales staff is conducting the business. Establishments are also maintained at San Francisco and Sacramento by the Thomas Day Company.

The window displays featured by the Thomas Day Company probably attract more attention to the store than does any other single feature. These displays have been worked up in a most systematic fashion and have been designed to follow a definite schedule that of course ties in closely with the advertising campaigns appearing simultaneously in the local papers.

In laying out the displays for the company, Mrs. Kathryn M. Tefft has been the directing head. Her work, however, is not limited to trimming the show windows, for she is also given the task of arranging the interior of all of the display rooms. Under the schedule adopted by Mrs. Tefft, the displays presented in the windows are changed once a week. In leaving them for a week, the company gives the public ample time to view any particular display and at the same time prevents any display from getting the appearance of being a fixed ornament.

Wherever possible, the display for any particular week is made to tie in with some event of either local or national importance. The ingenuity of the decorator is called forth to make the display appropriate and the results have been found to be well worth the extra effort required. Another feature that has been adopted in connection with the window displays is the focusing of sales activity on one class of merchandise. Both the advertising and the window trims are centered around the particular class of merchandise for the week, and sales persons are well informed as to the prices and applications of the featured goods and also the sales arguments needed in comprehensively demonstrating them.

Recently the Thomas Day Company has made several changes in the interior of the Oakland store in order to make it easier for the customer to purchase and at the same time to enable salesmen to better serve the customers. The change has been in the nature of dividing the former store width in half, thus reducing the distance that any customer will have to walk to reach any particular department on the first floor. By making the first floor show-room more compact, the company has been able to place the customer for one particular device in such a position that immediately adjacent is seen a display of some other device in which the purchaser can be interested by an adroit salesman. After sizing up the customer, the salesman is able to suggest some other appliance in which the purchaser may be interested, and as a result the volume of sales is increased considerably.

After diminishing the size of the first floor sales room, the company moved its radio department and the larger part of the portable lamp stock to the second floor of the building. This floor is reached by an elevator and when customers have been taken there they are allowed to spend as much time as they desire, in picking out merchandise that they need. Separate display rooms are provided on the third floor for the various classes of fixtures in order that customers may compare fixtures of a similar type and price, without being forced to remember the characteristics of some particular fixture in an adjoining room. All fixtures are provided with specially designed plugs to fit outlets in ceiling or wall, so that every piece can be shown lighted in any of the fifteen fixture display rooms, making for a very flexible arrangement, and eliminating in this department also the "set" appearance common to most lighting fixture displays.

The salesman secures from the customer the information as to about how much he wishes to pay for fixtures, and then shows a line approximating this cost, endeavoring always to sell at least the next grade higher by judicious suggestion. This plan has been found to work much better than the old one of showing the best first, for often after a customer had admired a hand made piece, it was difficult to sell the article he could afford. The "Three per cent for lighting equipment" slogan is always emphasized.

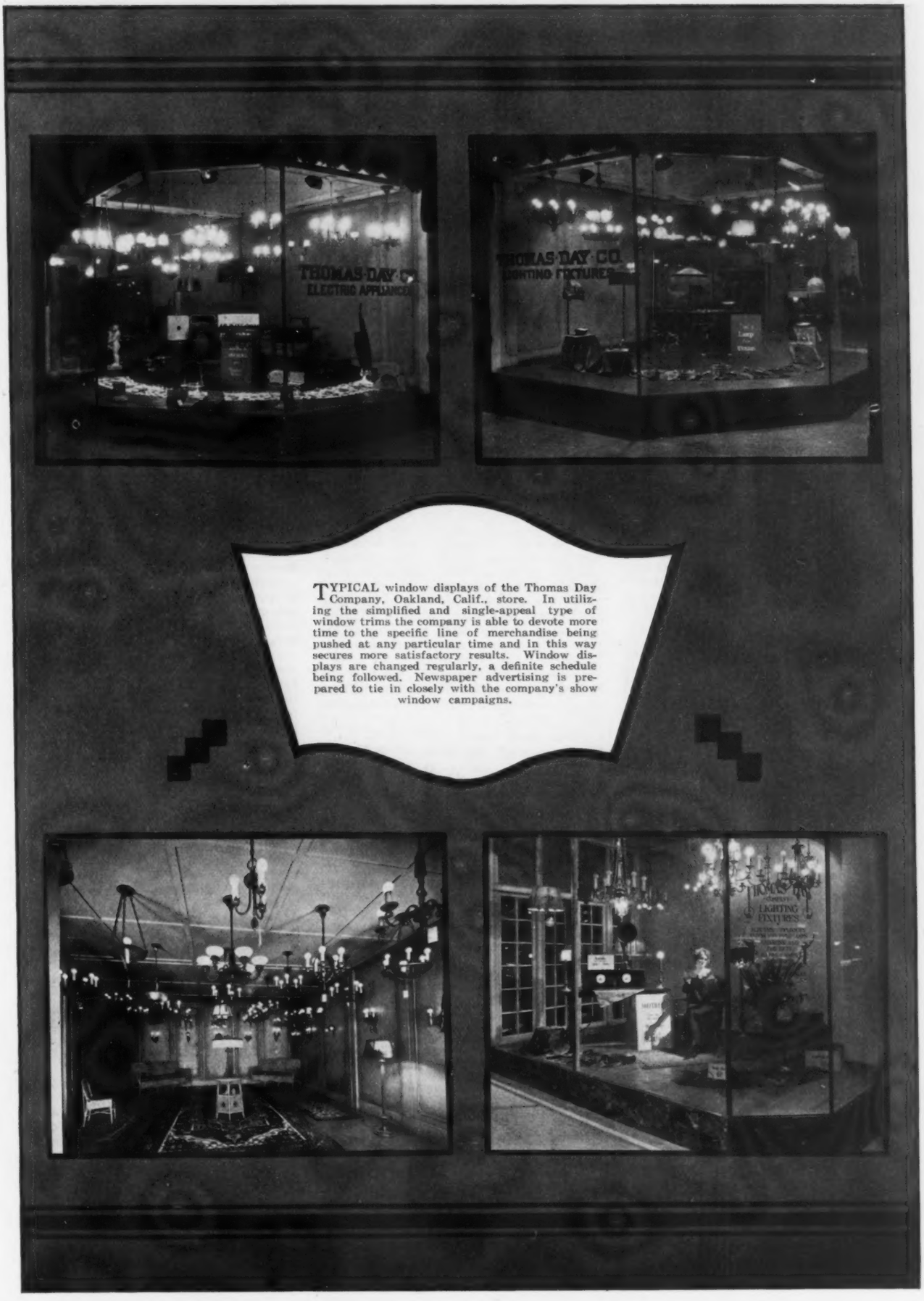
The radio display room is also situated on the second floor of the building occupied by the company; one set only being displayed at a time on the first floor, but no demonstrations are made there. The radio room is so wired that any set handled by the company may be plugged into a wall outlet that has both aerial and ground connections, and demonstrated to the interested prospect. By isolating the demonstration room from the rest of the store, the company has made the customer feel at ease, and has kept the sounds of the radio programs from the other display rooms. Softly shaded lamps and comfortable chairs complete the furnishing of the room.

Electric ranges and water heaters are displayed on the third floor also. A model kitchen has been set up, and everything is handy, permitting the demonstrator to prepare an entire meal before the eyes of the prospect. These demonstrations are all made on appointment, in order that neither the prospect nor the demonstrator may be kept waiting. Scheduling demonstrations only by appointment also has the advantages of requiring that food be on hand only when necessary, thus eliminating waste in this department.

To develop all classes of appliance and fixture business, the Thomas Day Company has employed a system of covering the field of new building and alterations, that works out in a most satisfactory manner. The system consists of a duplicate card system and follow-up letters to all persons who have taken out building permits in Oakland, Alameda, and Berkeley. One prospect card, containing all the permit information, is given the salesman, and a duplicate kept in the office. The salesman reports calls and progress made, and this information is recorded on the duplicate, so the office at all times has a complete history of the job. Two fixture letters are sent all prospects, one going out the same day the permit is issued, and the other thirty days later, while to all residences of $3,000 and over a series of electric cooking and heating letters are sent; the first emphasizing the wiring requirements, although this company does no wiring business, and the second brings to the attention the actual equipment. The staff is always ready to assist builders in planning installations and preparing specifications for complete electrical equipment, and this has been found a builder of good will as well as good business.

Sales-Manual on Irons and Ironers to Be Published.—A 96-page well illustrated manual to help sell more irons and ironers, to be published by The Society for Electrical Development, is now on the press.

The Albert Sechrist Manufacturing Company, of Denver, Colo., has closed its retail fixture display rooms at 17th and Tremont Streets and will consolidate them with the factory at 1717 Logan Street, according to a recent announcement of K. L. Francis.



TYPICAL window displays of the Thomas Day Company, Oakland, Calif., store. In utilizing the simplified and single-appeal type of window trims the company is able to devote more time to the specific line of merchandise being pushed at any particular time and in this way secures more satisfactory results. Window displays are changed regularly, a definite schedule being followed. Newspaper advertising is prepared to tie in closely with the company's show window campaigns.

INDUSTRIAL NEWS

Electricity Production Summary by Geological Survey

The Department of the Interior, through the Geological Survey, has just made public a summary of the annual production of electric power and the consumption of fuels by electric public utility power plants in the United States for the years 1919-1923, inclusive. The information is based upon monthly reports received from about 4,000 power plants generating electricity for public use. The capacity of the generators of these plants at the present time is about 18,000,000 kw., of which 10.7 per cent represents the Pacific states and 4 per cent the Mountain states.

In 1919 the total production of electricity for public use amounted to about 38,921,000,000 kw-hr. In 1923 it amounted to over 55,674,000,000 kw-hr., an increase of approximately 43 per cent. Of the 1923 output 34.8 per cent was produced by the use of water power and 65.2 per cent by fuel power, while in 1919 37.5 per cent had been produced by water power and 62.5 by fuel. However, it should be borne in mind that the amount of electricity produced by water power depends upon the supply of water available and an increase in that supply would naturally result in increased production at water-power plants, with a corresponding increase in ratio.

Output figures for each month in 1919 not having been compiled, state comparisons start with 1920. In that year the Mountain states produced 5.95 per cent of the total output and the Pacific states 12.42 per cent. In 1923 the latter figure increased to 12.77 per cent while that for the Mountain states decreased to 5.10 per cent. Of the Mountain division Montana led in production, the total being 1,126,016,000 kw-hr. in 1920 and 1,138,545,000 kw-hr. in 1923. Idaho came second with 590,864,000 kw-hr. in 1920 and 694,871,000 kw-hr. in 1923. In the Pacific group, California produced in 1920 3,735,645,000 kw-hr., which was 8.58 per cent of the total output; Washington was second with 1,196,725,000 kw-hr., or 2.75 per cent of the total; and Oregon third with 475,543,000 kw-hr. or 1.09 per cent. In 1923 the figures stood: California 5,069,-314,000 kw-hr., 9.10 per cent; Washington 1,446,486,000 kw-hr., 2.60 per cent; Oregon 594,434,000 kw-hr., 1.07 per cent.

The ten most important states in the production of electricity for the years 1920-1923 are given, in the order of their rank, as: New York, Pennsylvania, California, Illinois, Ohio, Michigan, Massachusetts, Washington, West Virginia and Montana. The first seven have maintained their relative standing throughout the period, and the percentages of the total United States' production for the first three in 1923 were, respectively, 15.67, 9.77 and 9.10.

In the production of electricity by water power New York led in 1920 with 18.76 per cent of the total output of the country, and California second with 15.91 per cent. For the three years following California was first and New York second, the percentages of the total in 1923 being 21.20 and 18.41, respectively.

The total consumption of fuel oil in the generation of electrical power amounted in 1920 to 13,122,704 barrels. In this California took first place, using 43.02 per cent. In 1923 total consumption amounted to 14,679,205 barrels, and California was first again with 22.68 per cent. As a whole, the Pacific states consumed 44.29 per cent of the entire amount consumed in 1920 and 24.68 per cent in 1923. Texas ranked second in the use of fuel oil for this purpose. Figures given for the consumption of gas in the production of electricity showed a slight amount used in Montana and Wyoming, while California consumed in 1920 12.03 per cent of the total with an increase to 21.24 per cent in 1923.

Copies of the summary may be obtained upon application to the director of the Geological Survey, Washington, D. C.

Chairmen of Sections of N.E.L.A Announced by President

Included among the appointments to the chairmanships of the sections of the National Electric Light Association for the coming year is that of W. R. Putnam, vice-president and general manager of the Idaho Power Company, Boise, Idaho, who will head the activities of the commercial section, according to an announcement made by Franklin T. Griffith, president of the association.

Mr. Griffith announced the chairmen of the other sections as follows: accounting, W. Paxton Little, treasurer Niagara Falls Power Company, Niagara Falls, N. Y.; technical, Horace P. Liversidge, Philadelphia Electric Company, Philadelphia, Pa.; public relations, Matthew S. Sloan, president Brooklyn Edison Company, Inc., New York, N. Y. Samuel Insull, president of the Commonwealth Edison Company, Chicago, Ill., has been appointed chairman of the public policy committee.

Electragists' Convention to Be Held in September.—The twenty-fifth annual convention of the Association of Electragists, Int., will be held at West Baden Springs, Ind., Sept. 29-Oct. 4. Representatives from all over the United States will be in attendance at the convention.

Fisheries Bureau Removes Baker River Plant Objection

Construction work on the hydroelectric plant of the Puget Sound Power & Light Company at Concrete on Baker River in Skagit County, Wash., may begin at the convenience of the company, following withdrawal of the protest filed by the United States Bureau of Fisheries, according to Chas. J. Bartholet, assistant state supervisor of hydraulics.

The bureau objected to the construction of the plant, which includes the erection of an impounding dam 235 ft. high, on the grounds that the dam would prevent salmon from ascending the river to their natural spawning grounds and especially because the development would render useless a hatchery of many years' standing at Baker Lake. A fish ladder was impracticable, it was held.

Following negotiations, the company proposed two methods whereby the development would not interfere with the fish, according to J. R. Russell, field superintendent for the bureau. The company at its own expense will construct a pond below the dam and the bureau is to catch and place a quantity of adult salmon taken while enroute to Baker Lake and determine whether they can be held to maturity at Concrete below the dam, it was stated.

If this proves feasible, the bureau can avail itself of the provision in the state law and accept a hatchery below the dam in lieu of a fishway, Russell said. Should this method fail, the company will install and operate a lift which which will put the live fish into the pond above the dam and will permit an overflow over or through the dam during the month of June each year to permit the young salmon to migrate down stream.

The proposal of the company has met with the approval of the bureau, Russell stated, which removes the only obstacle to the development of the site. The plant will have a capacity of 45,000 hp. and will cost approximately $500,000, according to the estimate.

Relation of Electricity to Farming is Discussed.—A conference of farm representatives, electric power company men, state and Portland Chamber of Commerce delegates and agricultural college authorities, was held at Corvallis, Ore., on May 5, to consider the relation of electricity to agriculture in Oregon. At the conference it was decided that an investigation of the use of electricity on the farm should be undertaken. The conference delegates authorized James T. Jardine, director of the experiment station at the Oregon Agricultural College, to appoint a committee to make the investigation.

Order Power Conservation in Southern California

Power Supervisor to Direct Intelligent Distribution of Power During Period of Shortage Caused by Drought

Due to an unprecedented dry year and a tremendous increase in load California electric utilities are faced with the most serious situation in their history and the Southern California Edison Company, on account of the extent of the territory it serves, has found it physically impossible to meet the demands for power and has ordered a 25 per cent curtailment of power usage over its entire system. The order became effective June 16.

This order came as a result of a conference between executives and engineers of all southern California electric utilities and representatives of the California Railroad Commission held in Los Angeles June 13. The meeting was called at the instigation of the railroad commission to consider steps to meet the present emergency. Testimony at the hearing brought out the fact that there would be a shortage of 126,000,000 kw-hr. on the Edison system during the last six months of the year which would require a curtailment of approximately 20 per cent.

Other utilities represented at the hearing showed that they would be able to meet the demands for power on their own systems and in the case of several of the companies they would be able to furnish power to the Edison company to help relieve the situation on its own system. A unanimous request was made by the utilities represented for the appointment of a power supervisor to assist in an intelligent distribution of the power available.

In curtailing the use of energy unnecessary employment of power for flood lighting, display lighting, etc., will be discontinued first. Industrial consumers, street railways and municipalities will be asked to reduce their energy consumption to three-quarters of normal. The Los Angeles Bureau of Power and Light, the largest individual consumer on the Edison system, will receive a 25 per cent cut in its kilowatt-hour delivery and will be forced to allocate this among its own customers.

Other utilities of the section affected have not yet felt the necessity of ordering curtailment on their respective systems but have agreed to carry on an educational campaign for conservation of power and to assist the Edison company by delivering to it all surplus energy available. California utilities are exerting every effort to cope with the deficiency in hydroelectric output caused by the worst drought in the history of the state and every available kilowatt of steam capacity is being pressed into service. New equipment is being installed as rapidly as possible and many obsolete steam plants are being rehabilitated and placed in service. Extensive use is being made of the large interconnected transmission system of the state for the interchange of power.

Although the situation is acute in northern California the utilities in that section expect to be able to meet the demands for power by rigid conservation without the necessity for enforced curtailment. No improvement in the situation is expected before Nov. 1 or possibly later unless early fall rains replenish the water supply.

At a second hearing called by the railroad commission in Los Angeles June 19, power company representatives, members of the Los Angeles Chamber of Commerce, the Los Angeles Bureau of Power and Light and the commission's engineers further considered the question of the power shortage. J. G. Butler, former chief of the division of water rights, state department of public works, who acted as power administrator during 1920, was selected as power supervisor during the present shortage. Until the arrival of Mr. Butler from the East, A. V. Guillou, gas engineer with the Railroad Commission, will take over the duties of this office.

Officials of the Los Angeles Chamber of Commerce assured the commission that they would take immediate steps to interest Chambers of Commerce in other cities in power conservation.

All power companies in the state are cooperating to the fullest extent. The Bureau of Power and Light of Los Angeles is taking every possible step to assist the Southern California Edison Company to meet the emergency on its system.

In connection with its 25 per cent curtailment order, the Southern California Edison Company is sending the following letter to all of its 235,000 consumers:

TO OUR CONSUMERS:

Owing to the unprecedented drouth of the past winter and spring we are faced with a serious shortage of power which could not be foreseen and was impossible to prevent. Consequently, it now becomes necessary to urgently request the active assistance and cooperation of our customers to at once restrict the use of electric energy in order that extreme drastic measures may not have to be put into effect later on. As a matter of fact, the shortage in kilowatt-hours available is equivalent to 25 per cent of the estimated requirements and the demand must now be reduced an equivalent amount in order to meet the conditions. This applies to each individual consumer.

The Southern California Edison Company is obtaining power from all possible sources. Many steam plants have been put into operation which have been out of commission for years past and new plants have been rushed in as rapidly as possible. In addition, the Edison company is buying all the power available from other companies. However, the shortage is so great that there are not enough available steam plants to make up the deficiency because of the shortage of water. All power companies and municipalities are cooperating in order that the energy available may be distributed to the best advantage for the benefit of the entire territory supplied. What is being done regarding the curtailment of uses and distribution of available energy from all sources is with the approval of and under the direction of the Railroad Commission of the State of California.

Consumers are expected to make effective reductions in their demand for electric service in accordance with the following classifications:

1st—Domestic Consumers. Consumption of energy for residence lighting and for the operation of electric appliances for all uses should be reduced to a minimum and discontinued entirely where gas or other heating is available. Two lamps should not burn where one would be sufficient and appliances must not be left in circuit when not actually in operation. It is urgent that each domestic consumer should follow these instructions implicitly.

2nd—Commercial Consumers. All decorative, display, sign and window lighting to be entirely eliminated. Interior illumination for stores, warehouses and other places of business should be discontinued in the daylight hours and reduced during other hours not less than 25 per cent.

3rd—Industrial Plants. All manufacturing and industrial plants must cut the use of electric energy by a full 25 per cent. This includes energy for both lighting and power uses. Such cut to be made between the hours of 6:00 a.m. and 10:00 p.m.

4th—Agricultural Consumers. Power used for irrigation must be reduced as much as possible, having due regard for the necessary requirements of growing crops. Those in charge of pumping plants should see that no pumped water is wasted through careless operation and that growing crops only receive sufficient water in order that their needs may be taken care of. Where the farmer can use a gasoline engine or a tractor to drive his pump it is necessary that he should cooperate to that extent.

5th—Street Lighting. It will be necessary to reduce the number of lamps in use on all streets and highways to a minimum. One or two lights in a block will be required to take the place of five or six which may now be in use. In other instances where the same number of lamps must be kept burning as heretofore, the candlepower of each lamp shall be reduced 50 per cent.

6th—Street Railways. Companies operating electric cars for city and suburban service will be required to reduce their demand 25 per cent, even if it is necessary to reduce the number of cars in operation to the same extent.

Your earnest cooperation is needed and expected, to assist in helping the state to successfully cope with present emergency conditions.

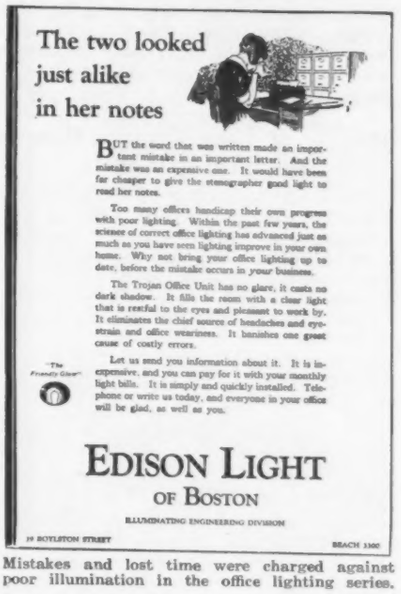
Yours truly,

SOUTHERN CALIFORNIA EDISON COMPANY.

Human Interest Is Paramount in Edison Light Advertising

Two series of advertisements with a high degree of human appeal and with unusual features for arresting and holding interest were made the basis of a campaign in store window lighting and office lighting by the Edison Electric Illuminating Company, of Boston, during April, May and June. Two of these advertisements, one from each group, are reproduced herewith to show the general nature of the copy.

In both groups the make-up is similar. Each advertisement is headed by a cut of catchy appearance having a caption intended to grasp and hold the


The two looked just alike in her notes
BUT the word that was written made an important mistake in an important letter. And the mistake was an expensive one. It would have been far cheaper to give the stenographer good light to read her notes.
Too many offices handicap their own progress with poor lighting. Within the past few years, the science of correct office lighting has advanced just as much as you have seen lighting improve in your own home. Why not bring your office lighting up to date, before the mistake occurs in your business.
The Trojan Office Unit has no glare, it casts no dark shadow. It fills the room with a clear light that is restful to the eyes and pleasant to work by. It eliminates the chief source of headaches and eye-strain and office weariness. It banishes one great cause of costly errors.
Let us send you information about it. It is inexpensive, and you can pay for it with your monthly light bills. It is simply and quickly installed. Telephone or write us today, and everyone in your office will be glad, as well as you.
EDISON LIGHT
OF BOSTON
ILLUMINATING ENGINEERING DIVISION
39 BOYLSTON STREET
BEACH 1300

Mistakes and lost time were charged against poor illumination in the office lighting series.

reader's interest. The reading matter then ties in with the caption and presents one or two logical arguments for using better light, and offers the free services of the company's engineers to suggest and design the particular installation necessary to produce the desired effect.

In the window lighting group the copy states that only three out of every ten Boston merchants have adequate window lighting, and that these three are getting business that might other-

wise go to competitors. The idea that good illumination attracts prospective buyers, and produces more sales and larger profits, is stressed throughout.

In the office lighting group the idea that insufficient light causes loss of time and lowers the efficiency of office employees, with the consequent increased cost to the employer, is developed. The human element is introduced by featuring the trials and tribulations of the stenographer that has made costly mistakes in transcribing her dictation, due to poor light, and the series as a whole treats the prosaic and well-worn subjects in a new and attractive manner.

41
14
193% more window shoppers
A NEW ENGLAND merchant who believed that plenty of light meant plenty of business, made the test. He made his window lighting better than his neighbors, better than his competitors, and then he watched.
Before, 14 people out of a hundred had stopped; now 41 stopped to examine the goods on display.
His window shoppers increased 193 per cent. Better than that, the number of his customers increased, the total of his sales increased; business was brisk; and even slow-moving stock moved faster.
Will you make a test in your own store?
We have a staff of expert lighting engineers who are at your call. One of them will inspect your window lighting, and furnish you with the best lighting plans for your own windows, complete with working drawings from which your own contractor can work quickly and without disturbing your business. To customers of our Company there is no charge or obligation for the service of our engineers. Write or telephone today to
EDISON LIGHT of BOSTON
ILLUMINATING ENGINEERING DIVISION
39 BOYLSTON STREET
BEACH 3300

The value of well lighted show windows was stressed in one series of advertisements.

Raising of Lake Fordyce Dam Is Resumed by Utility

Work on the raising of Lake Fordyce Dam of the Pacific Gas and Electric Company has been resumed. The dam will be raised 47 ft. and the capacity of the reservoir thus created will nearly double that of the dam originally built there in 1881. The storage capacity of Lake Fordyce will be 47,000 acre-feet when the present construction work is completed.

Lake Fordyce Dam is situated on Fordyce Creek, a tributary of the South Fork of the Yuba River, about 9 miles from Cisco, Calif. The lake is at the head of the company's Spaulding-Drum system and is at an elevation of about 4,875 ft. The dam is a rock-filled structure about 800 ft. long, 140 ft. thick at the foundation and when completed in 1881, rose to a height of 92 ft. In adding 47 ft. to the height of the dam, a total of 300,000 cu. yd. will be quarried from the mountain side and added to the present dam.

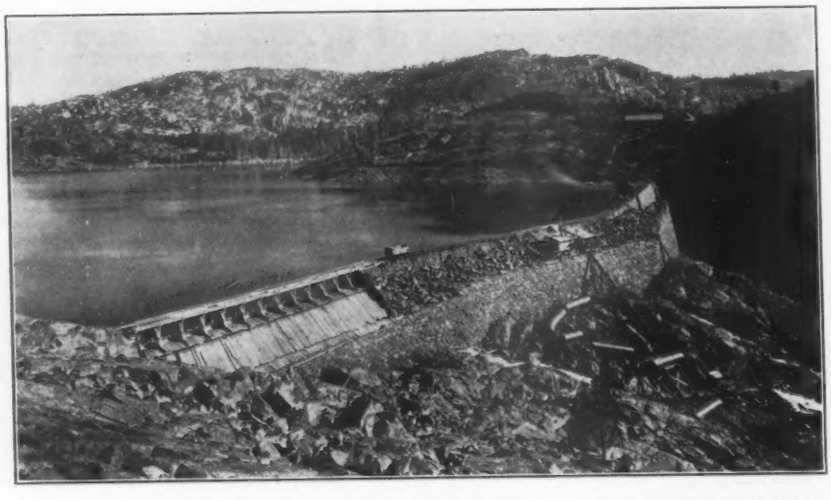
Preliminary work in connection with raising the dam was started in 1923, and it is the hope of the Pacific Gas and Electric Company to complete the work there this year. In addition to raising the height of the dam, the company will line the entire upper stream face of the finished rock-filled dam with concrete to prevent leakage.

Manuals for Building Electric Range Business

The four manuals on electric range business development which The Society for Electrical Development prepared in cooperation with the Electric Cooking and Heating Division of the Commercial National Section, National Electric Light Association, are now off the press.

Three of these manuals deal respectively with Sales Management, Advertising and Retail Sales and Management. Each contains 96 pages, is well illustrated and covers very completely an important phase of electric range development. Copies are now available to non-members of the society at $2 each. The fourth manual, which deals with Servicing, contains 32 pages and is also illustrated. Copies are available to non-members of the society at $1 each. Full information may be obtained from The Society for Electrical Development at 522 Fifth Avenue, New York, N. Y.

Crouse-Hinds Company, Syracuse, N. Y., has recently issued bulletin No. 2059. The bulletin is entitled "Condulets for Concealing in Concrete," and contains illustrations and descriptions of the company's line of this material.



Lake Fordyce Dam of the Pacific Gas and Electric Company that is being raised 47 ft. to double the capacity of the reservoir.

Civic League Urges Separation of Water and Power Bonds

In a special report sent to the Board of Supervisors of San Francisco, the board of governors of the Civic League of Improvement Clubs and Associations stated that it was of the opinion of the latter board that separate propositions should be made to the public in regard to securing additional funds for the completion of the Hetch Hetchy water system and for the erection of an electrical distributing system in San Francisco. The report stated that it had been estimated that $33,000,000 would be needed to complete the water project and that in addition to this it would be necessary to secure at least $15,000,000 for the purchase of an established plant from a local power corporation or the municipal construction of a distributing system.

In regard to the separating of the two proposals, the report sent to the Board of Supervisors states:

> The Civic League has asked that a separate bond proposition be submitted to the people for the construction or purchase of a municipal hydroelectric power system at the same election, so the people may express themselves as to whether they desire to engage in the municipal power business. The Civic League is not committed against municipal power distribution, if same can be sanely financed.
>
> If the people by a vote authorize a bond issue for municipal distribution of power, such is the only authority and sane financing for San Francisco to engage in the hydroelectric power business.

Considerable discussion has been engaged in by the San Francisco supervisors as to whether or not the two propositions should be combined in one bond issue and at the time of going to press no decision had been reached. Judge John C. Thomson, San Francisco's bond expert in New York, has advised the supervisors that in his opinion it is not advisable to combine the two amounts for water and power in a single bond issue. It was his opinion that the combining of the two propositions could only be justified if the two purposes are inherently a part of one enterprise, and that past history has indicated that the two purposes are really separate and should not be combined.

Application Filed for Queets River Hydro Project

Development of a hydroelectric plant with an ultimate capacity of 20,000 hp. at an estimated cost of $1,000,000 is indicated in the application for water rights on the Queets River in Jefferson County filed with Marvin Chase, Washington supervisor of hydraulics, by the Grays Harbor Railway & Light Company of Aberdeen.

The company asks for 3,000 sec.-ft. of water, to be diverted from the Queets River just below the confluence of the Clearwater River with that stream, and for reservoir rights on the stream. The development will be known as the Fisher Rapids power plant and will be developed in two units, the first of which will generate 10,000 hp.

The impounding dam will be 50 ft. high, 700 ft. long on the top and 350 ft. long at the bottom, using the water at a 68-ft. head. Development will also entail the construction of a pipe line 4,000 ft. in length. No definite time was given as to when work will start on the plant.

Hydroelectric Resources of Washington Studied

University Bulletin Makes Comprehensive Survey of Available Water Power and Suggests Superpower System

The creation of a Washington state superpower commission, "empowered to conduct comprehensive engineering power surveys of all the streams of the state, and to prepare plans for the economic development of all available power sources," is suggested by Carl Edward Magnusson, professor of electrical engineering in the University of Washington, in a bulletin recently issued by the university entitled, "Hydroelectric Power in Washington." This bulletin makes a reconnaissance survey of the water power resources of the state, using data obtained from reports and bulletins of the U. S. Geological Survey, the U. S. Weather Bureau, the State of Washington Geological Survey and engineering journals. A number of tables and plates are introduced to show the geography and topography of the state, the water sources and drainage areas, the developed and undeveloped power sites, the present and proposed transmission line systems, and a plan for a superpower system, proposed by the author for guiding future development.

In developing his idea of a superpower system, Professor Magnusson says, "The mere tying together of two or more power systems, that were designed and constructed to operate as independent units, can bring only a small part of the advantages that would be gained if the final scope of the system had formed the basis for the original design. The present interconnecting practice is merely a step in the right direction." He shows that the present interconnected lines follow in general the routes he suggested in 1919 for a trunk transmission line system that would be "basic for the effective development of the hydroelectric power on the Pacific Coast." This trunk line extends north and south, in the valleys paralleling the coast mountains from Canada to Mexico, and has various east and west laterals, two of which extend across Washington. At present the interconnected lines form an unbroken circuit from Montana to Puget Sound, and there are only three gaps totaling less than thirty-five miles between British Columbia and the Mexican border.

The bulletin lists eighty-six possible economic developments, ranging from 10,000-hp. to 750,000-hp capacity, that could be fed into this trunk line, and suggests that, since some of the streams are fed by rainfall and others by glaciers and snowfields, high water marks are attained at different seasons, so that great economy in operation would result from the control of the great transmission system as a unit. For the purpose of effecting further economy, he argues that less auxiliary steam plants would be required, and suggests that they be located near the coal mines so that the coal transportation cost may be saved, instead of, as is now the case, at the large load centers to which coal must be hauled. He points out that the main trunk transmission line passes directly through or near all the important coal fields of the state.

Professor Magnusson says that, from an engineering point of view, this superpower system is entirely practicable, but he directs the attention to other outstanding obstacles in this statement, "Economic and legal problems of prime importance must be solved before any marked progress can be made towards the realization of state-wide superpower systems. Fundamental questions of ownership and control, regulation and management, and in fact most of the complex administrative and legal problems of public utilities, require new interpretations and call for solutions consistent with the imposed conditions." In this connection he advocates state or federal ownership, or the applying of "common carrier principles" to trunk transmission lines, and the making of the transmission of electric energy an independent business, distinct from the business of generation and distribution.

One of the interesting facts brought out in the bulletin is found in the table listing available water power by states, in which it is shown that Washington stands first with 8,647,000 hp., or 16.04 per cent of the total for the United States. California, Oregon, Idaho and Montana follow in the order named, and these five Western states encompass a total of 32,474,000 hp., or over 60 per cent of all the hydroelectric resources of the United States. These figures, it is shown, are unquestionably low, and in support of the statement that the future development of this power may exceed the estimate by fifty per cent, the case of Massachusetts is cited. In 1908, the U. S. Geological Survey estimated the maximum available water power of Massachusetts at 228,000 hp., whereas, in 1922, there was actually installed in that state a combined capacity in water wheels totaling 335,057 hp., or an increase of forty-seven per cent of the 1908 estimate.

Edison Company Rate Application to Be Heard July 14

The hearing of the Southern California Edison Company's application for an increase in rates for a nine-month period has been continued until July 14. On June 17 the company appeared before the California Railroad Commission with application for an increase in rates from July 1, 1924, to March 31, 1925, but on account of the application of attorneys representing consumers of the company, the case was continued over to July 14. If the rate increase is granted at the next hearing the new rates will probably go into effect Aug. 1.

The Edison company has proposed a system of surcharges which will yield the company approximately $2,971,000, leaving the company a net shortage of $789,000 for the nine-month period, as it is estimated that the expenses for the year will probably total $5,568,000 greater than those of a normal year. The surcharges proposed called for the following increases:

General lighting service, surcharge 1¼ cents per kw-hr.; street lighting and flat rate service, surcharge 20 per cent; cooking and heating service, surcharge ½ cent per kw-hr.; railway power service surcharge 3/20 cent per kw-hr.; industrial power service, surcharge for installations up to 99 hp., ½ cent; up to 999 hp., 7/20 cent; and over 1,000 hp., 3/20 cent; wholesale and resale power service, surcharge for installations up to 999 hp., 7/20 cent; over 999 hp., 3/20 cent; agricultural power service, surcharge 3/20 cent per kw-hr.

Advice on Power Bond Issue Is Sought by Los Angeles

Following defeat by the people of Los Angeles of the $21,000,000 bond issue, the returns from which were to be used in financing extensions and betterments to the distributing system of the Los Angeles Bureau of Power & Light, the Board of Public Service Commissioners of that city has formally requested the California Railroad Commission to determine the amount of bonds required to finance necessary extensions to the city's electric distributing system. In the application sent to the Railroad Commission, the Public Service Commission stipulated that none of the bond money would be used for acquiring the electric properties of the Los Angeles Gas & Electric Corporation or for building city lines that would parallel the lines of the Los Angeles Gas & Electric Corporation in any territory in which the corporation was exclusively furnishing service.

It is the intention of the Public Service Commission of Los Angeles to present another bond issue proposal to the voters at the Aug. 26 state and county primaries.

In the resolution sent to the Railroad Commission, the Public Service Commission requested that the Railroad Commission make "such investigation and review of the conditions of the Los Angeles municipal electric distributing system in relation to the demands on it for electric service as it may deem necessary, in order to determine the amount of bond funds required by the Bureau of Power and Light, to bring the system up to proper capacity and condition to meet all present demands, and to provide extensions and betterments to meet increases in demands during a three-year period."

Make New Call for Construction of Cushman Power House

Bids for the construction of power house unit No. 1 of the Lake Cushman power project of the city of Tacoma, Wash., have been rejected. New bids have been ordered and the new call provides for the separating of the work into two parts. The first part covers the diversion of the water from the site and the construction of the foundation, while the second is for the construction of the power house proper. J. L. Stannard, chief engineer of Tacoma, believes that by separating the work a material saving will be achieved.

The original bids for the construction of the power house were rejected because the low bid was illegal on account of the fact that the bidder failed to make the necessary affidavit. The second bid was unbalanced on unit cost, and the third bid was considered too high.

Large Generator Ordered by Edison Company.—The Southern California Edison Company has recently placed with the Westinghouse Electric & Manufacturing Company an order for a 28,000-kva., horizontal water wheel generator which will be installed in the company's Big Creek No. 1 plant. The machine is so designed that at a speed of 300 r.p.m. it delivers current at 11,000 volts, 50 cycles, and at a speed of 360 r.p.m., current is delivered at 12,000 volts, 60 cycles. The generator is complete with a direct connected exciter.

Civil Engineers Discuss Colorado River Problems

Federal Power Commission Engineer States Necessary Development Will Be Built by Private Capital Under Regulation

Problems of the development of the Colorado River were the main topic for discussion at the general session of the convention of the American Society of Civil Engineers held at Pasadena, Calif., June 18-21. All speakers urged a prompt development of the river, but there was considerable divergence of opinion as to what was the best site for the construction of a storage reservoir to satisfy flood control, irrigation and power demands.

President C. E. Grunsky introduced the subject with a plea for early action, pointing out the necessity of some definite arrangement with Mexico, on the part of the federal government, however, before any important development should be made. This was followed by motion pictures presented by E. C. LaRue of the U. S. Geological Survey which gave a graphic understanding of the region under discussion.

The main feature of the program was a paper by Col. Wm. Kelly, chief engineer of the Federal Power Commission, which was presented in his absence by his assistant, Major H. S. Bennion. Colonel Kelly presented a comprehensive analysis of the conditions and problems of the river and its tributary districts, reaching the conclusion that the development of the river should proceed in two stages, the first of which should consist of a storage reservoir in the lower basin at Mohave, with a possible later development at an upper canyon site. The scheme of development of the river should, in his opinion, provide for the following considerations:

1.—Losses from evaporation should be kept to a minimum.
2.—All available head should be used for power.
3.—Storage for regulation of flow should be located above the canyon section so that the equated flow can be used through the greatest practicable head.
4.—Storage in and below the canyon section should be limited to that necessary for re-regulation of flow for irrigation in the Lower Basin plus such quantity as is essential for immediate flood relief of existing developments in the Lower Basin. Failure to conform to this provision will mean ultimate duplication of storage capacity and consequent curtailment of irrigation due to unnecessary evaporation losses.

On account of the unsettled situation as between states and the fear of the states on the upper basin that irrigation waters and power developed through storage on the upper river will be absorbed by California and lands in Mexico, he suggested that development for the moment be confined to flood control and irrigation needs of the present developed lands on the lower river, to be met by a low dam at the Mohave site. However, if it is desired to pay for the expense of the dam through the development of power, he pointed out that an installation of 240,000 hp. would probably be justified at this point with a higher dam, which could be made at a cost of not more than $150 per hp., a figure well under that at which power development is now being made in the southern section of California.

Power demands of southern California he estimates will have increased from a present figure of 522,860 in millions of kw-hr. to 1,175,790 by 1930 and 2,191,090 by 1945. Power development on the Colorado River, which could probably be completed by 1932, should, he contended, not exceed an installed capacity of 300,000 kw. to meet the needs of the surrounding states. A larger development will ultimately be absorbed, but he stated that the risk of excessive carrying charges is not justifiable if the smaller development is feasible. The proposed dam at Boulder Canyon contemplated a development of 714,000 hp. which, he stated, would be an overdevelopment of the river at the present time and at the same time would militate against the ultimate complete development of the river, curtailing the ultimate possible power development by 300,000 hp. and ultimate irrigation by about 50,000 acres. "If applied for under the Federal Water Power Act," stated Colonel Kelly, "the reclamation project would be refused a license until it was modified to conform to a full scheme of development."

The Glen Canyon site, on the other hand, which was condemned by the engineers of the U. S. Reclamation Service because of a poorly cemented sandstone foundation, was, according to Colonel Kelly, composed of rock which showed greater compressive strength under test than mass concrete and was therefore satisfactory as bedrock. The greatest objection to the site, in his opinion, was the fact that it was 135 miles from a railroad.

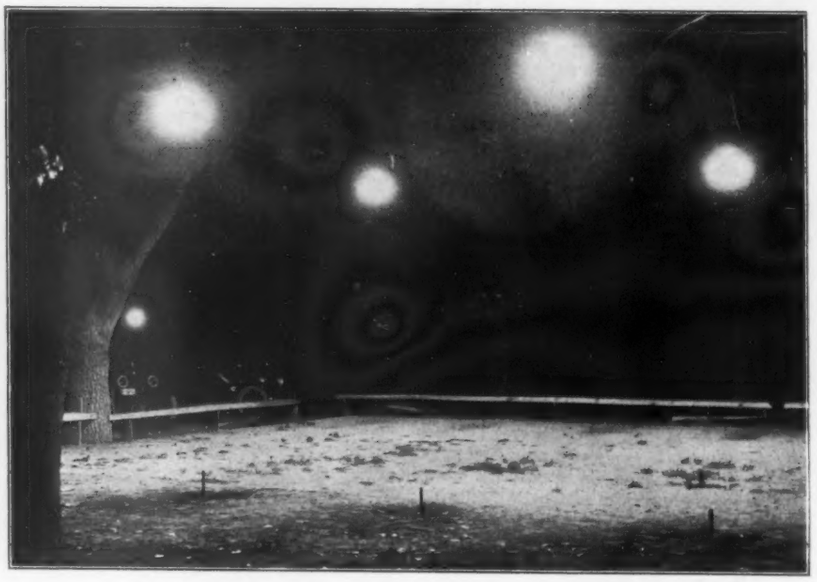
His remarks were concluded with the statement that "all development needed on the Colorado will be built by private capital under adequate federal and state regulation if the river is given over to development under the Federal Water Power Act." If the federal government decides to provide flood storage for the Lower Basin, on the other hand, he urged the Mohave development, so operated that the present low water flow will not be increased beyond present irrigation needs. This should be followed at as early a date as possible with negotiations for a suitable treaty with Mexico and an agreement as to the water that will be provided for Mexican lands.

In the discussion which followed, E. C. LaRue urged that the development of the river begin with a reservoir at Glen Canyon. This was opposed by Louis C. Hill, consulting engineer of Los Angeles, on the ground that the bedrock material at this location was not satisfactory. A. P. Davis, former head of the U. S. Reclamation Service, defended the development of the river at the Boulder Canyon site on the ground of the increased water and power development which would result and the smaller factor of evaporation, which, he stated, would be excessive at the Mohave site. Wm. Mulholland, in charge of engineering work undertaken by the city of Los Angeles, pointed out the necessity of early development from the standpoint of the needs of the southern section of California and the necessity for agreeing upon a plan of action without waiting too long for the settlement of nice points of difference.

The financing of the project should not be placed as a burden upon power alone, according to F. H. Fowler of San Francisco, but should be prorated among the various interests on the basis of benefits received, supplemented, in case of excessive burdens, by aid from the government if necessary. He pointed to the example of the Sacramento and San Joaquin Rivers in showing how this had been worked out in practice. In general he favored Colonel Kelly's plan of developing the river in two stages, with a small storage reservoir on the lower river and a subsequent dam at the Glen Canyon site on the upper river.

Dangers of the All-American canal were pointed out by C. J. Allison, formerly connected with the Imperial Irrigation District, on account of the shifting sands along the route laid out.

No formal action was taken by the society.



To permit members of the Boulder, Colo., Horseshoe Pitchers' Association to enjoy their chosen sport at night, the city has provided electrical illumination for the court in the city park. Four 200-watt lamps with 16-in. reflectors make up the installation. The cost of lighting the court is about $2.50 a month.

Washington Power Company Adopts Group Insurance

Effective as of July 1, The Washington Water Power Company and its subsidiary, the Spokane United Railways, of Spokane, Wash., will present life insurance policies to all employees who have been in their service over six months. These policies will be taken out under the group insurance plan without expense to the employees. Service from six months to one year entitles the employee to a $500 policy, and this is increased $100 a year until the maximum of $1,000 has been reached. The insurance will be in force as long as the employee remains on the payroll. Under this plan about 428 employees of the Spokane United Railways will be covered, and approximately 500 employees of The Washington Water Power Company, which serves all that portion of eastern Washington and northern Idaho within a radius of 100 miles of Spokane. Arrangement has been made to the effect that, if seventy-five per cent of the employees so desire, an additional amount of insurance may be taken out, at the employees' expense, at the lower rate made possible by the group insurance. Administration of the insurance plan will be under the direction of W. H. Ude, director of the department of public relations of the power company.

This group insurance is in line with the policy of The Washington Water Power Company as regards the welfare of its employees. It has for a number of years operated a medical aid association, of which employees have practically full direction, that for a nominal charge of $1 or $2 a month entitles each employee to medical, surgical and hospital attention, including specialized work on eye, ear, nose and throat.

Southern Sierras Power Company Requests Temporary Rate Increase.—The Southern Sierras Power Company, which includes the Holton Power Company's system, has applied to the California Railroad Commission for authority to place in effect Aug. 1, 1924, temporary increased rates for electric energy. The rates requested would return to the company the increased cost of operation due to the production of power in steam plants to supplement its reduced hydroelectric production. The drought in southern California has greatly reduced the company's supply of hydroelectric power and steam plants will have to supply the necessary energy to fulfill the demand on the company's system. The company in applying for the increase, sets forth that the cost of operation for the 16 months ending April 30, 1925, will be approximately $390,000 more than in ordinary years.

Water and Power Act Initiative Petitions Filed.—Initiative petitions for the California State Water and Power Act carrying 79,017 names, were filed with Secretary of State Frank C. Jordan on June 16. The petitions carried approximately 3,000 more names than were necessary. Following the filing of the petitions a definite announcement was made of the formation of the California State Water and Power League. The power league chairmen for the various parts of the state have been named and include the following: Frank McDonald, vice-president of the San Francisco Building Trades Council; Mrs. Mollie Bloom Flagg, of Los Angeles; Mrs. Elizabeth Gerberding, Berkeley; and Seth R. Brown, Los Angeles, president of the State Federation of Labor. Rudolph Spreckels was chosen treasurer of the association, Louis Bartlett, former mayor of Berkeley, secretary, and Frank Hitchborn, campaign manager and publicity director.

Discuss National Home Lighting Campaign at Denver

The national home lighting campaign was launched in the Mountain region June 27-28 when K. A. McIntyre, representing the lighting educational committee and The Society for Electrical Development, visited Denver, Colo. Following conferences with the various executives who will supervise the campaign in that section, Mr. McIntyre addressed a meeting of Denver electrical men.

Arrangements were made by the Electrical Cooperative League of that city. Following the initial work outlined by Mr. McIntyre, plans were made for league representatives furthering the program in other parts of Colorado, Wyoming and New Mexico.

Penalty for Skagit Contractor Up to Seattle City Council

The Board of Public Works of Seattle, Wash., has left any assessment of penalty against R. C. Storrie & Company to the city council of that city. The Storrie company is the contractor on Seattle Skagit hydroelectric project and any penalty that would be assessed against the company would be because it has failed to complete construction on the Skagit tunnel by May 1. J. D. Blackwell has advised the Board of Public Works that he does not believe the tunnel will be completed before Aug. 1.

Northwest Association Elects President.—The Northwest Electric Light and Power Association, which held its annual convention at Gearhart-by-the-Sea, Ore., June 25-27, has elected as its new president, R. M. Boykin, manager of the southern division of the Puget Sound Power & Light Company, Seattle, Wash. The southern division of this company was formerly the North Coast Power Company of Portland, Ore., where Mr. Boykin has his headquarters.

Define Radiator at Commercial Section Session.—The sub-committee on commercial and domestic heating of the commercial section of the Pacific Coast Electrical Association, at its meeting at Coronado, Calif., June 18, decided that the proper definition of indirect heaters should be as follows: "Radiator is a term that is connected with appliances for steam and hot water heating and should be applied to heaters of similar appearance." On motion of A. J. Kercher, consulting engineer, this change in the report of the committee as originally printed, was passed and ordered to be a part of the report of the committee. G. L. Stannard was chairman of the committee and the other members were E. A. Wilcox, J. C. Douglas, P. P. Pine, H. V. Mooney, David Reed, J. T. Deppe, O. E. Sholders, O. B. Doerr, W. G. Tanner, and C. B. Merrick.

Books and Bulletins

WIRING FOR LIGHT AND POWER

By TERRELL CROFT. 551 pages; 552 illustrations. Cloth, 5 x 8 in. $3.00. Published by McGraw-Hill Book Company, New York, N. Y.

In the fourth edition of this widely used text, which is a very complete explanation of the "National Electrical Code," a complete revision has been made to conform with the 1923 edition of the "Code." As a result of the rearrangement and important changes to prior regulations it is fortunate that such a text as has just been prepared by Mr. Croft is available at this time.

According to the author: "Almost anyone can install electrical wiring and apparatus so that they will work in some fashion or other. But to install them so that they will be electrically safe and mechanically secure involves the application of knowledge that has been gained accumulatively by hundreds of workers during many years of practice. Obviously, it is scarcely feasible for any one individual, unaided, to acquire from his own experience this requisite knowledge. Hence, if one is to follow the best methods in installing electrical equipment he must necessarily avail himself of the knowledge and experience obtained by his predecessors."

The accumulated knowledge and experience of men engaged in the installation of electrical wiring and apparatus have been incorporated in a set of rules and specifications known as "The National Electrical Code." Its principal function is to specify methods which will minimize fire hazards and yet at the same time be commercially feasible. This is a broad field to cover, with the result that the "Code" is almost entirely free from detailed explanations.

This book on the subject of wiring for light and power installations is a detailed explanation of the code. By means of clear cut drawings, descriptions, and elaborations the meaning of the code is clearly explained and there is little excuse for improper installations if this text is carefully followed.

The author has the happy faculty of explaining the subject clearly and such explanations with the aid of exceptionally clear cut drawings should make the text of considerable value to anyone engaged in wiring and installing electrical equipment.

From the standpoint of the reviewer the chapter on "Grounding" is especially valuable. The explanation of things which might occur under certain conditions is most complete.

The book is quite up-to-date as evidenced by the fact that instructions are given covering the methods of wiring for the protection of such important equipment as radio receiving stations.

The index is quite complete and a set of questions at the end of each chapter adds considerable value to the book when it is used as a text for a study of this most important branch of the electrical industry.

E. R. S.

Meetings

Competition Keen for Trophies at P.C.E.A. Convention

The golfing events of the Pacific Coast Electrical Association convention at Coronado, Calif., occupied the center of the platform on June 17, with the Chula Vista Country Club as a battleground. Several competitions were decided simultaneously over the 18-hole course under the direction of A. H. Biewener of the San Diego Consolidated Gas & Electric Company.

Much added enthusiasm was noted in this year's tournament due in part to the introduction of the Pelton cup which was offered for the first time by The Pelton Water Wheel Company. This trophy was won by R. A. Monroe of the Pacific Gas and Electric Company with a net score of 64. The Byllesby cup was won for the second time by W. L. Frost of the Southern California Edison Company with a net score of 69. R. A. Monroe also won the Jobbers' Central Station cup by reason of his low net score.

W. L. Frost was awarded the prize for the best gross score, he having turned in an 83 for the round. C. C. Hillis of the Electric Appliance Company, San Francisco, was second with 85 gross. In the match play against par competition, R. C. Smith of the Pelton Water Wheel Company was first, finishing three up on par. R. A. Monroe was second in this contest. The prizes for best net team score went to J. N. Addis and C. L. Hill who turned in a 145 net.

The kickers' handicap resulted in several ties, making it necessary for a putting competition on the ball room floor of Hotel del Coronado to settle the issue. In the playoff W. C. Smith of the General Electric Company won first prize and second place went to Ray Cavell.

Education Subject of Wyoming Convention Discussion

Cooperation with newspapers and the formation of utility courses in educational institutions, including comprehensive plans for tying in with the national home lighting campaign, were discussed at the annual convention of the Wyoming Utilities Association held at Casper, Wyo., June 23 and 24. At the convention the continued support of and plans to strengthen the jurisdiction of the state utilities commission were discussed under the direction of E. A. Bacon, manager of the Natrona Power Company, and retiring president of the association.

The largest number of guests in the history of the association were entertained with an extensive trip through the Salt Creek oil fields. The trip included a visit to the 25,000-kw. gas-fired generating plant being built by the Midwest Refining Company to electrify the field. Among the interesting addresses presented at the convention were those of C. C. Johnson of Denver, on commercial engineering by the Mountain States Telephone Company, and of F. P. Firman of the natural gas division of the Ohio Oil Company, Casper.

The newly elected officers of the association are as follows: C. L. Titus, Wyoming state manager, Mountain States Telephone Company, Cheyenne, president; James A. Potts, manager, Rawlins Light & Power Company, first vice-president; James A. Withrow, manager Sheridan County Electric Company, second vice-president, and R. E. Richardson, manager Lovell Gas & Electric Company, treasurer. President Titus has appointed Charles St. John of Cheyenne as secretary.

Seattle and Tacoma Clubs Hold Joint Annual Picnic

All of the celebrated sports and amusements of summer time were enacted at the annual joint picnic of the Electric Club of Seattle and the Tacoma Electric Club held at the Farmers' picnic grounds at Enumclaw, Wash., on June 14. Men of the electrical fraternity from both cities, accompanied by their families, attended the picnic.

Following a picnic lunch at noon, a program of sports and amusements was presented to the picnickers. The sports committee was headed by Julius Hooper, secretary of the Seattle Electric Club, assisted by Harry J. Martin, president of the Seattle club; "Dick" Cole, of the Economy Fuse Company; Joe Wells of the Fobes Supply Company, and Charlie Smutz, of the Western Electric Company. Winners of all of the field contests were awarded prizes which had been donated by the jobbers and dealers of Seattle and Tacoma.

Following the field events a ball game between the Seattle and the Tacoma clubs continued for ten innings until the winning team could be picked. The final score was 5 to 4 in favor of the Seattle club. A purse of $50 was divided among the players on the winning team.

COMING EVENTS

Pacific Coast Electrical Supply Jobbers' Association—
Quarterly Meeting—Del Monte, Calif. July 24-26, 1924

Association of Electragists, International—
Annual Convention—West Baden Springs, Ind. Sept. 29-Oct. 4, 1924.

Annual Banquet by American Association of Engineers

The annual convention of the American Association of Engineers, which was held in San Francisco, Calif., June 11-13, was brought to a close by a banquet on the evening of June 13. Among the speakers were M. M. O'Shaughnessy, city engineer of San Francisco; Prof. Harris J. Ryan, president of the American Institute of Electrical Engineers; Prof. William F. Durand, nominated for the presidency of the American Society of Mechanical Engineers; Prof. C. D. Marks, president of the Joint Engineers Council of San Francisco and past president of the American Society of Civil Engineers; Frank L. Sizer, president of the Engineers' Club of San Francisco; and F. H. Newell, past president of the American Association of Engineers.

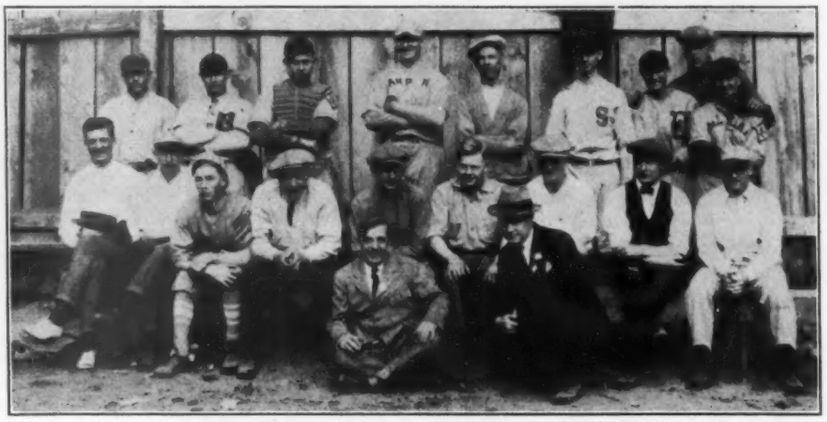
Arthur P. Davis, chief engineer and general manager of the East Bay Municipal Utility District, and former director of the United States Reclamation Service, delivered the address of the evening. C. E. Grunsky, president of the American Society of Civil Engineers, was scheduled to speak but was unable to be present. The outgoing president of the American Association of Engineers, Webster L. Benham, conducted the installation of his successor, Harold Almert, who in turn installed the newly elected vice-presidents and directors.

Portland Engineers Hold Annual Joint Picnic Meeting

Following the custom of former years, the Portland, Ore., sections of the A.I.E.E. and N.E.L.A. made the last meeting of the year an open meeting with picnic, song and dance, substituting for the usual thing.

Leaving Portland by autos about 5 p.m., a party of about 175 made up of members and their ladies traveled to the picnic ground at Hillsboro. On the way inspection was made of the 600-ft. steel tower and transmitting apparatus of the Federal Telegraph Company, and also a two-unit automatic 1,500-volt railway substation of the Oregon Electric Railway.

Announcement was made of the following duly elected officers of the Portland section of the A.I.E.E. for the coming year: Chairman, Harry P. Cramer; secretary-treasurer, L. W. Ross; executive committee, J. C. Henkle and L. R. Elder.



The contending ball clubs—Seattle standing and Tacoma sitting. The Seattle club won the game.

Manufacturer, Dealer and Jobber Activities

The Westinghouse Electric & Manufacturing Company has recently put on the market a new electric heater known as the Solar Glow, suitable for use as a room heater and as an auxiliary heater in extremely cold climates. The heater is a combination of both the convection and radiation type, for, in addition to heating through the utilization of air currents, radiation is effected from a buffed copper reflector placed around the heating element. The new heater has a cast iron frame, faced with statuary bronze and is finished on the sides and back in antique bronze so that it may be placed in any part of the room as well as inside a fireplace. The heating element, designed for operation on standard domestic circuits, consists of wire coils staggered in a one-piece porcelain unit and protected by a removable guard. The heat is regulated by a conveniently located switch, giving three different degrees of temperature control.

The General Electric Company is now furnishing a special grade of oil, known as M-6 oil, for use in lubricating their various types of demand meters, including also the clock mechanism of the type M-6 demand meter. It is especially adapted for use in such devices in preference to the use of ordinary clock or watch oil.

Allis-Chalmers Manufacturing Company has taken over the records, drawings, patterns, patents, jigs, fixtures and manufactured stock of the Worthington Pump & Machinery Corporation pertaining to and manufactured at the latter company's power and mining works at Cudahy, Wis. The Allis-Chalmers company will continue manufacture of the former Worthington line of crushing, cement, mining and creosoting machinery at its West Allis works. The Allis-Chalmers company has announced that special attention will be given to the prompt shipment of repair and spare part orders for the Worthington line taken over. The Worthington company will specialize on its other lines.

K. I. Dazey, northern California distributor of C-T electric trucks, with headquarters in San Francisco, has announced the addition of C. W. Hutton to his staff. Mr. Hutton is well known in the electrical field, having been in the employ of the General Electric Company for four years and having served as superintendent and assistant manager of the Sacramento division of the Pacific Gas and Electric Company. Later he acquired the agency of the General Vehicle Company of Long Island City, N. Y., for northern California. The business of this company was taken over during the war by the Walker Vehicle Company, and for the past few years Mr. Hutton has been selling Walker trucks in northern California.

The Safety Electric Products Company, Los Angeles, Calif., will soon move into its new building which will give it 40,000 sq. ft. additional floor space. The company will also shortly celebrate its fifth anniversary.

The Truscon Steel Company, Youngstown, Ohio, has announced a new type of steel pole in heights up to 50 ft. The pole is pressed from steel channels or I-beams and is so designed that no special equipment is required by the lineman. Pole steps are eliminated and spurs are unnecessary.

Trico Fuse Company, Milwaukee, Wis., has announced the appointment of James J. Noble as San Francisco, Calif., district representative for the company. Offices will be at 952 Folsom Street, that city, and stock will be carried for Pacific Coast shipments.

The Pacific Coast Steel Company, San Francisco, Calif., has just issued a new book on galvanized steel transmission towers and poles and on other galvanized steel structures. The book contains interesting illustrations and engineering data.

The Triumph Electric Company, Cincinnati, Ohio, has announced that the Miller-Selden Company, Detroit, Mich., has been appointed distributors in that section for Triumph motors.

Nathaniel Baldwin, Inc., Salt Lake City, Utah, has announced the establishmen of a branch office at Chicago, Ill. Headquarters will be at 1524 South Western Avenue and the office will be in charge of J. L. Broadbent. Stock will be carried to take care of Middle Western requirements.

The Sangamo Electric Company, Springfield, Ill., has recently added to its line a new horizontal polyphase watthour meter that is said to be unusual in construction. In addition to other unique features it is stated that all parts of the new meter, with the exception of the register, are interchangeable with standard Sangamo Type H single-phase meters.

J. J. O'Leary has been appointed street lighting specialist for the mountain region of the Westinghouse Electric & Manufacturing Company. His new headquarters will be in Denver, Colo. He formerly served in the same capacity in the Chicago office of the company.

The Okonite Company, Passaic, N. J., has appointed J. L. Phillips manager of the San Francisco office of the company. Mr. Phillips was formerly manager of the Atlanta (Ga.) office. George N. Brown succeeds Mr. Phillips as manager of the office in Georgia.

The De La Vergne Machine Company of New York, N. Y., has completed arrangements whereby The Pelton Water Wheel Company of San Francisco will represent it on the Pacific Coast. A special representative will maintain headquarters in the general offices of the latter company. The De La Vergne Machine Company is the manufacturer of large oil engines and refrigerating machinery.

The Western Electric Company, New York City, has issued a catalog containing useful information on illumination and on the types of luminaires manufactured by the company.

The Electric Corporation, Los Angeles, has moved into new and larger quarters in that city. The new building of the company is six stories in height and gives greatly increased floor space.

The Angelus Electric Company, Los Angeles, Calif., has moved to new and larger quarters at 713 East Third Street, that city, where it is manufacturing a new type electric welder.

Peerless Light Company, Chicago, Ill., has announced the purchase of the Avalon Iron Works and the addition to the Peerless line of the products of the Avalon company.

The Rome Wire Company, Rome, N. Y., has announced the opening of a new office and warehouse at 1200 West Ninth Street, Cleveland, Ohio, under the charge of C. R. Evans, district manager.

Century Electric Company, St. Louis, Mo., has published form 533, which is devoted to the Century line of repulsion start induction single phase motors designed for use with refrigerating machines.

The Ward-Leonard Electric Company, Mount Vernon, N. Y., has issued a new catalog on motor starters and controllers. The booklet contains description and prices of a complete line of direct current motor control apparatus.

The P. A. Geier Company, Cleveland, Ohio, is offering several prizes to dealers' salesmen for sales of Royal vacuum cleaners.

The United Electric Company, Canton, Ohio, is conducting a prize contest for salesmen establishing the highest sales records on Ohio electric cleaners.

The Reynolds Electric Company, Chicago, Ill., has issued a new leaflet descriptive of its color hoods for sign lighting.

Cooperation shown at its highest point by the sturdy athletes of the Seattle and Tacoma electrical clubs. The race, the finish of which is shown above, was run during the annual joint picnic of the Electric Club of Seattle and the Tacoma Electric Club. Evidently the boys at the right won the hotly contested derby. The four individuals in the dusty center "also ran."

Personals

H. G. Butler, who has been engaged since 1921 in private practice as consulting engineer, has been made power supervisor under the California State Railroad Commission. He was in the service of the Railroad Commission

H. G. BUTLER

when he decided to practice his profession indpendently, having been assistant chief engineer of that body until June, 1918, when he was made power administrator with control over power companies operating in the north central part of the state. In 1920 he was given control of all power generated in California. Prior to his connection with the Railroad Commission, Mr. Butler was engaged in railroad and street railway construction work. In 1911 he went to Panama for the government and was in charge of the railroad yards there during the construction of the canal.

Charles F. Loweth, chief engineer of the Chicago, Milwaukee & St. Paul Railway and president of the American Society of Civil Engineers for the year 1923, is visiting the Pacific Coast.

H. A. Carmichael has been elected treasurer of the Westinghouse Electric International Company to succeed F. L. Townsend, who died some time ago.

J. F. Callbreath, secretary of the American Mining Congress, Washington, D. C., and **George A. Stahl,** Colorado representative on the board of governors of that organization, were guests at a recent meeting of the Sacramento Valley Electrical Society, Sacramento, Calif.

Charles A. Semrad, assistant general manager, and **Paul Lee,** legal department, both of the Public Service Company of Colorado, Denver, Colo., are spending some time at Rochester, Minn.

Fay Woodmansee, president of the Electrical Engineers' Equipment Company of Chicago, Ill., has been visiting the Pacific Coast in the interests of his firm.

O. L. Dickenson, gas superintendent of the Fresno division of the Pacific Gas and Electric Company, San Francisco, Calif., was a recent San Francisco visitor.

George A. Hughes, president of the Edison Electric Appliance Company, Chicago, Ill., attended the annual convention of the Pacific Coast Electrical Association at Coronado, Calif. Mr. Hughes also visited San Francisco on his way to the convention of the Northwest Electric Light and Power Association at Gearhart, Ore.

C. K. Wehn, in charge of sales of Blaw-Knox standard steel buildings in the Pittsburgh, Pa., district, has in addition to his present capacity been made assistant sales manager of the standard building department.

Harold Willis, president of the Sacramento Valley Electrical Society, Sacramento, Calif., was chosen to represent that organization at the Pacific Coast Electrical Association convention at Coronado, Calif., June 16-20.

A. F. Maccallum, Rocky Mountain district service manager of the Westinghouse Electric & Manufacturing Company with headquarters in Denver, Colo., recently visited Salt Lake City, Utah.

H. D. Randall, newly elected chairman of the Electrical Cooperative League in Denver, Colo., is attending a meeting of district managers of the General Electric Company at Association Island, N. Y. On his return he expects to stop in several Eastern cities to go over the activities of the electrical leagues organized there.

W. J. Canada, engineering director of the National Electric Light Association, New York City, attended the annual convention of the Pacific Coast Electrical Association at Coronado, Calif. He also spent a few days in San Francisco before leaving for the convention of the Northwest Electric Light and Power Association at Gearhart, Ore.

E. A. Phinney, president of the Jefferson County Power & Light Company, Golden, Colo., and prominent in utility circles of the mountain region, has been appointed convention chairman for the annual meeting of the Rocky Mountain division of the National Electric Light Association and Colorado Public Service Association at Glenwood Springs, Colo., Sept. 15-17.

W. A. Fouhy, traveling plant inspector for the Western Electric Company, with headquarters in New York City, has been making an inspection trip through Western territory in the interests of his firm.

H. H. Kerr, electrical superintendent of the Public Service Company of Colorado, addressed a meeting of the Colorado section of the American Society of Civil Engineers in Denver, June 23, on the new Valmont power plant which his company is constructing near Boulder, Colo.

Lewis A. Lewis, sales manager, and his assistant, **Ross B. McElroy,** of The Washington Water Power Company, Spokane, Wash., attended the convention of the Northwest Electric Light and Power Association at Gearhart, Ore., June 25-27.

S. B. Gregory, California representative of the Arrow Electric Company, Hartford, Conn., has left for an extended trip to the factory. He will be gone several weeks.

Kirby Strickland, of the United States Steel Products Company, Pittsburgh, Pa., was recently in San Francisco, Calif.

Ray W. Turnbull, assistant Pacific Coast sales manager of the Edison Electric Appliance Company, Portland, Ore., spent the week of June 9 in Spokane, largely for the purpose of aiding The Washington Water Power Company in the organization of their campaign on Hotpoint Hughes electric ranges. Mr. Turnbull gave a series of talks to the sales department of the power company, which were conspicuous not only for the thorough technique of sales that was displayed throughout the series, but for the strong appeal to the salesmen who heard them. He concluded his visit with a dinner served at the Davenport Hotel the evening of June 13, attended by the sales department of The Washington Water Power Company and other guests.

Frederick Maples, formerly power director of the Long Island section of the Pennsylvania Railroad and until recently connected with Hubbard & Company, Pittsburgh, Pa., has been made manager of the steel pole department of the Truscon Steel Company, Youngstown, Ohio.

Rollin M. Smith, formerly connected with the department of electricity of Los Angeles, Calif., has been appointed electrical safety engineer for the Electrical Contractors' and Dealers' Association of that city. Mr. Smith was born at Winona, Minn., in 1884. In 1906 he entered the employ of Woodill & Hulse, Los Angeles, as an electrician. For two years he was electrician for the Coulter Dry Goods Store, and later, as foreman, had charge of the installation of the generators and a 39-ft. switchboard in Hamburgers' Dry Goods Store. He was made electrical inspector in the department of electricity of the City of Los Angeles in 1909. He was field inspector for the next twelve years, at the end of which time he became assistant to H. N. Beecher, chief electrical inspector, and was assigned to engineering work in the office of the department of electricity. Mr. Smith's practical experience, his knowledge of the technical

ROLLIN M. SMITH

phases of the industry, and his wide acquaintance among the electrical fraternity in Los Angeles, make him particularly well equipped to handle the duties of his new position. Mr. Smith is the author of the Los Angeles Wireman's Handbook, a second edition of which is being planned as part of the program of the association to give safe electrical service to the city.

D. C. Stewart, Pacific Gas and Electric Company district superintendent of electric lines and substations in the Nevada district, with headquarters in Grass Valley, Calif., recently made a brief visit to San Francisco, Calif.

Joseph Thieben, general manager, Panama Lamp & Commercial Company, San Francisco, Calif., has returned from an extended trip to the Northwest. During the journey Mr. Thieben visited Portland, Ore., Tacoma, Seattle and Spokane, Wash.

Clifford M. Holland, engineer in charge of the construction of the vehicular tunnel under the Hudson River in New York, was a recent visitor to San Francisco, Calif., where he attended the annual convention of the American Society of Civil Engineers.

A. C. Cornell, Rocky Mountain district manager of the Western Electric Company, was a visitor at the Salt Lake branch of his company recently and on his return to Denver stopped at Casper for the annual convention of the Wyoming Public Utilities Association.

Kenneth A. McIntyre, of the Society for Electrical Development, New York City, recently visited Denver, Colo., where he spoke before the Electrical Cooperative League of Denver. Mr. McIntyre is also representing the Lighting Educational Committee.

J. McKeen Cattell, editor of Scientific American and the Scientific Monthly, attended the convention of the Pacific Coast section of the Society for the Advancement of Science at San Francisco, Calif.

U. L. McNulty, electrical engineer of Fresno, Calif., was a recent visitor to San Francisco, Calif.

Lyle G. Fear, recently appointed manager of the Portland (Ore.) branch office of the Westinghouse Electric & Manufacturing Company, has been in the service of that organization for about fifteen years, having entered the apprentice course at its East Pittsburgh Works in 1909. Later he was employed on the sales forces of the

LYLE G. FEAR

company's offices in Butte, Mont., and Spokane, Wash. In 1912 he became affiliated with the Portland branch. He has been in that office as a salesman since that time, with the exception of fifteen months when he served during the World War as a lieutenant in the navy on overseas duty. Mr. Fear is a graduate of Yale University with the class of 1908.

Samuel Kahn, vice-president and general manager of the Western States Gas & Electric Company, Stockton, Calif., recently spent some time in San Francisco on business for his company.

George A. Campbell, of the Reno Light & Power Company, Reno, Nev., was a recent visitor to San Francisco.

Grant Call, manager of the heavy duty department of the Edison Electric Appliance Company, Chicago, Ill., was a recent visitor to San Francisco, Calif., stopping over there on his way to the convention of the Northwest Electric Light and Power Association at Gearhart, Ore.

F. G. Broiles, of the International Electric Company, Los Angeles, Calif., is on an extended trip to Eastern cities.

Preston S. Millar, president of the Electrical Testing Laboratories, New York City, recently spent some time in San Francisco, Calif.

Ward Harrison, illumination engineer of the National Lamp Works of the General Electric Company, Nela Park, was one of the chief speakers at the convention of National Office Building Owners' and Managers' Association held at Colorado Springs, Colo., June 23-25. Before returning to the East Mr. and Mrs. Harrison made an automobile tour of the Colorado mountain region.

H. L. Jackman, vice-president of the Western States Gas & Electric Company, Eureka, Calif., recently spent a few days in San Francisco on business for his company.

J. L. Stannard, chief engineer of the Lake Cushman power project under development by the city of Tacoma, Wash., accompanied by **A. F. Darland,** superintendent of the electrical department, has gone to Milwaukee, Wis., to confer with the Allis-Chalmers Company regarding the fabrication of the generators and turbines for the Lake Cushman plant. The Allis-Chalmers Company holds the $600,000 contract for furnishing machinery for the plant.

E. B. Merriam, executive engineer of the switchboard department of the General Electric Company, Schenectady, N. Y., has been elected a member of the board of managers of the American Institute of Electrical Engineers. This is the national governing body of the Institute. Mr. Merriam's election is for a term of four years, beginning Aug. 1. He has been a member of the Institute for 18 years and is a past chairman of the Schenectady section, having served on nearly all the committees of the section.

B. M. Tassie, Pacific Coast manager of the Manning-Bowman Company with headquarters in San Francisco, Calif., recently spent a few weeks in Los Angeles and southern California going over the territory with local representatives of the Western Electric Company.

A. F. Bedorf, supervisor, system regulation division, equipment and tests department, Duquesne Light Company, Pittsburgh, Pa., recently spent several weeks in Los Angeles and southern California.

M. Hayashi, chief designing engineer of the Daido Electric Power Company, and director and chief civil engineer of the Gifu Electric Power Company, and **R. Koyama,** chief engineer of the Yahagi Hydroelectric Company, both of Tokyo, Japan, arrived recently in San Francisco. They plan to spend about a month on the Pacific Coast visiting various hydroelectric plants.

W. R. Putnam, vice-president and general manager of the Idaho Power Company, Boise, Idaho, has been appointed chairman of the commercial section of the National Electric Light Association. Mr. Putnam is well known in the electrical field and has taken an active part in the affairs of the industry, particularly in the Northwest. He has served as president of the Northwest Electric Light and Power Association and acted as chairman of the commercial section of the national organization for the 1922-23 term. Early in his career Mr. Putnam was manager of

W. R. PUTNAM

the Red Wing Gas & Electric Company, Red Wing, Minn., and prior to his connection with the Idaho Power Company was commercial and sales manager for the Utah Power & Light Company, Salt Lake City, Utah.

A. Carlson, of the treasurer's office of the Western Union Telegraph Company, New York City, recently spent several days in San Francisco, Calif., on business for the company.

Obituary

H. M. Swetland, president of the United Publishers Corporation, which publishes Iron Age, Dry Goods Economist, Automotive Industries and other important trade journals, died at his home in Upper Montclair, N. J., June 15. At one time he was owner of Power and of Engineering and Mining Journal, as it was then called, both now owned by the McGraw-Hill Company. Mr. Swetland was one of the pioneers of modern industrial publishing, and was at the time of his death president of the National Publishers' Association, the Class Journal Company, and the Federal Printing Company.

Edward D. O'Brien, assistant superintendent of public utilities, Seattle, Wash., died in Seattle recently, at the age of 51 years. Mr. O'Brien had been in the service of the city since March 1, 1909.

Frank W. Larson, of the Spokane Electrical Furnishing Company, died June 18 following a short illness. Mr. Lawson has been prominent among the electrical fraternity for several years.

Trade Outlook

San Francisco

In San Francisco business circles the feeling seems to prevail that the final low level for the year has been reached and a fairly good fall trade may be anticipated. Conditions in the wholesale trade show improvement. Reports from the dry goods houses are to the effect that while some influence of the drought and hoof and mouth disease has been felt, business is only slightly under that for last year. It is felt that retailers are keeping minimum stocks and buying only for immediate needs. Improvement is indicated in wholesale hardware lines, although conditions in general are quiet. The drought in the agricultural sections has had an unfavorable effect on the movement of new farm implements. Department stores and furniture houses report increase in volume over last year, as do several of the large meat packers, the latter adding that they find it necessary to keep after collections.

Bank clearings for the month of May were slightly under those for the same period last year, but building permits showed an increase. Interest rates have declined. The re-discount rate in force at the Federal Reserve Bank is 4 per cent.

There is a quiet feeling of confidence that business in general is on a sound basis.

Salt Lake City

The most important event in industrial circles during the past month in this section was the formal opening of the Columbia Steel Corporation's plant at Ironton, near Provo, Utah, on June 7. This new industry is looked upon as marking the beginning of an era of increased business activity, the effect of which will be more noticeable as its operations become more extensive.

Increased activity in out-of-door pursuits has reduced the surplus of practically all classes of seasonal labor. Throughout the larger part of this territory, mining and industrial concerns are running steadily, while the demand for farm labor is increasing.

Badly needed rain has improved the agricultural situation, although in some districts it is predicted that crops will probably be somewhat shorter than normal, due to early season dryness.

A rather extensive program of highway construction is under way in some parts of the territory. Building activity in Salt Lake City and other larger towns continues unabated.

In all branches of the electrical industry there seems to be no lack of activity.

Collections and credits are fair and improving.

Los Angeles

With the advent of warm weather in Los Angeles during the past few weeks, the sale of electrical fans has increased, thus aiding in maintaining a fairly good electrical retail business, while at the same time it has caused a slowing up in the sale of radio apparatus. However, business of the first two weeks of June shows a decided improvement over the last two weeks in May and is about on a par with that of the same period a year ago. The wholesale trade, while not up to that of last year, due to the decline in building, shows signs of improvement and is better than at this time last month. Manufacturers report very good business prevailing in their lines.

Owing to the extremely dry weather during the past winter, there has been a 25 per cent reduction in use of power on the lines of the Southern California Edison Company, which furnishes most of the power for Los Angeles and the surrounding territory, and this will slow up retail appliance business to some extent.

While building permits took a decided drop during the first two weeks in June this year as compared with those of last year, bank clearings show a decrease of only about 9 per cent for this period, which is a fair index of business as a whole in this section.

Portland

There appears to be no cause for great alarm over the trend of general business in this district. During the past few weeks retail trade has been somewhat dull, but usually this is so at this time of year. It is felt that Portland's growth has been solid with little or no inflation so that it has little to fear from the present situation.

Portland's water-borne commerce is continuing to show gains. During May of this year a substantial increase was shown.

Enough rain has fallen during the past two weeks to relieve, in a large measure, the agricultural situation. Orchardists report good prospects for the year's crop and the fire hazard has been much reduced. More rain is needed.

Lumber production is now slightly above both new business and shipments. Prices have declined but there has been no apparent reduction in the number of men employed.

Building construction is going ahead, and, together with a rather large road construction program, is providing employment for a large number of workers.

Central stations are pushing electric ranges with moderate success.

Denver

The business outlook in virtually all lines continues to be regarded with optimism although buying is still slow. Some increase in wool transactions in Colorado and Wyoming has been noted. Prices are low on account of inactive mills but the outlook is good. The supply of cattle at the local stockyards is reported meager, with prices steady. The local oil market shows improved strength.

Building continues without let-up, and residential construction is still leading on account of the eagerness of homebuilders to have as much work as possible completed in time for the fall opening of schools. Construction is just starting on the General Electric Company's $175,000 broadcasting station at Denver, and announcement has been made that work would start at once on a 10-story hotel to be erected in Denver.

Renewed activity is being manifested in several of the mining camps, especially at Cripple Creek, where some of the best ore in the history of the camp has been found.

Considerable activity in appliance sales has been noted on account of interest in gifts for June brides.

Seattle

Retail and wholesale trades report buying has been spotted throughout the spring and now continues to evidence starts and halts. The general volume, however, has been satisfactory, with conservative purchasing for future needs continuing to rule the wholesale trade.

Building, particularly in residence construction, is still very active. About seventy-nine new homes, averaging in cost $4,000 each, were started in Seattle the second week in June. Many commercial structures have been begun. Influx of new industries, claimed to be at the rate of about ten a month, has created a heavy demand for rental structures, especially of the light manufacturing and factory type.

Lumber manufacturing still continues very unsatisfactory, with the market weak and inclining downward. Logging is at a standstill in many sections of Puget Sound, resulting in a certain amount of unemployment.

Jobbers and dealers in the electrical industry report sales of smaller appliances showing a decided increase since the first of June, the gain being particularly noticeable in household devices, such as percolators, toaster stoves, vacuum cleaners, etc.

Along construction lines, contractors report there is a slight increase of business, with prices fair, and collections from fair to good. Stocks in all lines are adequate, with shipments coming through regularly.

Spokane

An exceptionally heavy rain, general throughout the Inland empire, followed by occasional showers, has averted the threatened damage to the wheat crop, with the direct result of restoring confidence and optimism in business circles. A yield of at least 50 per cent of last year's heavy wheat crop is anticipated. With a stiffening market, the prospects for the wheat growers are very good.

Retail sales in Spokane and the territory responded to the better outlook for crops. The Washington Water Power Company ended a successful campaign on electric ranges May 17, but in view of the improved general conditions still another campaign was launched June 16.

The deliveries of live stock to Spokane stockyards have increased this month, and good prices are quoted, thus enabling the packers to maintain a normal output.

Mining conditions in British Columbia and northern Idaho are excellent. Three of the largest operators have recently declared substantial dividends, and one of the largest companies in British Columbia has begun an extensive construction program.